

Komatsu's Environmental and Social Activities

Environmental Report



Biodiversity



● Initiatives that Deal with Biodiversity

Pursuing Environmental Management



- Komatsu's Relationship with the Environment
- Environmental Action Plan and Results for FY2012
- Organizational Chart of the Environmental Management Structure
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- Environmental Inspection
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- Komatsu's International Initiatives through the Environment

Mitigating Climate Change



- Line Up of Tier4 Machinery
- Hybrid Hydraulic Excavators Surpass 2,000 Units in Sales
- Thermoelectric Power Generation
- Environmental Servicing Programs for the Latest Machinery
- Introducing to the Market the Miniature Servo Press "H1F110-2"
- CO₂ Reduction of Suppliers
- Halving Electricity Usage Project
- New Hydraulic Drive Forklift FH Series
- Developing the Latest Engine Technology
- Autonomous Haulage System (AHS)
- Introducing to the Market the Fiber Laser Cutting Machine
- Reducing CO₂ Emissions in Manufacturing Operations
- Reducing CO₂ Emissions in Logistics
- Reducing CO₂ Emissions in Non-manufacturing Divisions

Promoting Recycling



- Promoting the Reman Remanufacturing Business
- Effective Utilization of Resources in Manufacturing Operations (Waste)
- Effective Utilization of Resources in Manufacturing Operations (Water Resources)

Environmental Risk Management




- Promoting Legal Compliance, and Pollution Mitigation and Prevention
- Management of Chemical Substances and Pollution Prevention
- Reducing the Use of Substances of Environmental Concern and Complying with the EU REACH Regulation

Topics



- Biodiesel Fuel (BDF) Project
- KOMATSU CASTEX Awarded the "Toyama Prefecture Environmental Conference Chairman Award"

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Pursuing Environmental Management

Komatsu's Relationship with the Environment

Komatsu promotes environmentally-friendly activities throughout the entire Group to realize its vision of "What Komatsu Can Do and What It Must Do" for the environment and sustainable development.

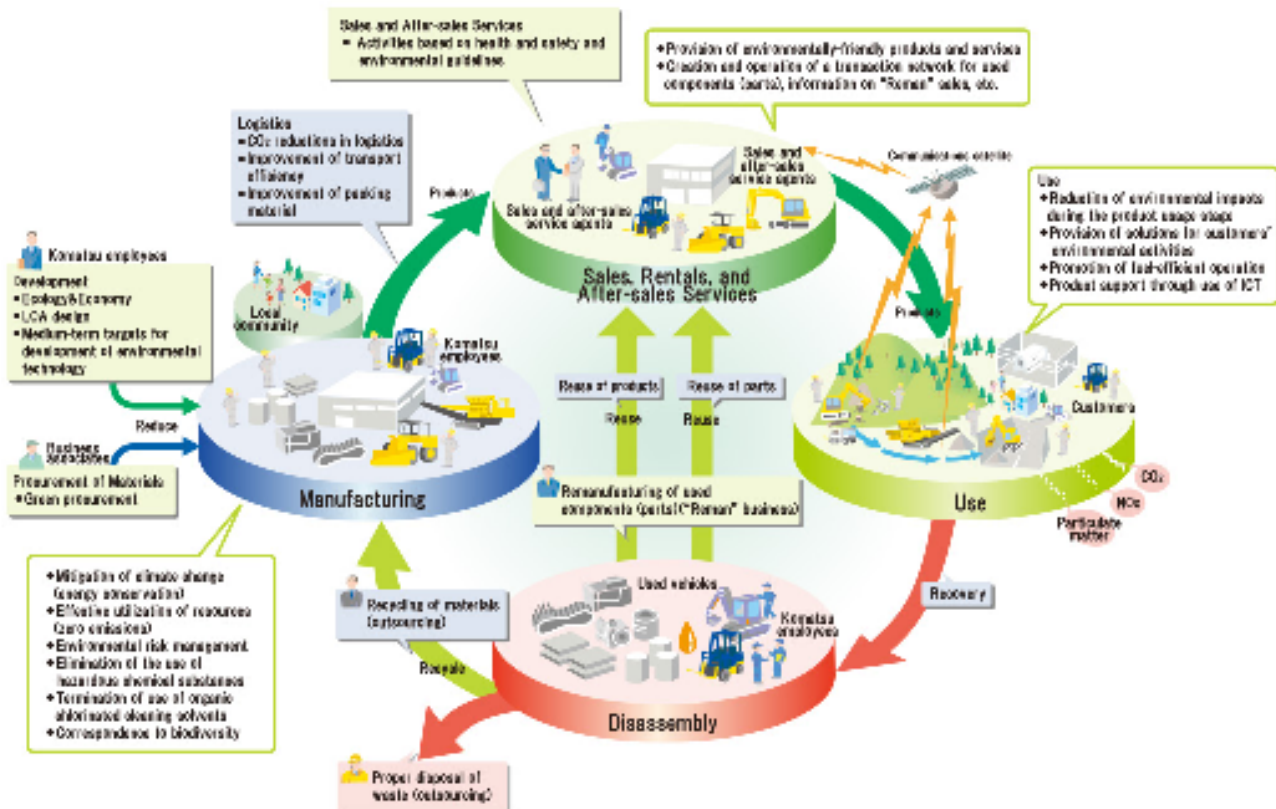
In recognition of the fact that our business activities affect the environment on a regional and global level, we, at Komatsu, have placed the focus on the following four key areas:

- 1)Climate Change
- 2)Establishment of a Sound Material-Cycle Society
- 3)Conservation of Air, Water and Other Natural Resources as well as Management of Chemical Substances
- 4)Biodiversity

In line with the Komatsu Earth Environment Charter revised in 2010, the Komatsu Group embarks on global initiatives across business areas guided by the fundamental principles of


- (1)Contributions to Realization of Sustainable Society,
- (2)Simultaneous Realization of Environmental and Economic Performance, and
- (3)Observance of Corporate Social Responsibility.

Relationship of the Komatsu Group's Business Activities with the Environment



You can see expanding figure by clicking figure above.

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Pursuing Environmental Management

Komatsu Earth Environment Charter

Corporate Principles

1. Contributions to Realization of Sustainable Society

Mankind must not only promote the further growth of a rich and comfortable society but also pass down this indispensable environment of our planet earth to future generations in a sound and healthy condition.

We, at the Komatsu Group, define environmental conservation efforts as one of the highest priority management tasks, and endeavor to contribute to the sustainable growth of society by integrating advanced technologies into environmental conservation efforts in all our business activities. This is represented by our hybrid construction equipment which features a substantial reduction of CO₂ emissions while in operation and by our superior manufacturing.

2. Simultaneous Realization of Environmental and Economic Performance

We are committed to improving both environmental performance and economic efficiency, as a group of companies working toward superior manufacturing for customer satisfaction. To this end, we constantly take up the challenge of advancing technologies to develop creative products that improve both environmental performance throughout the product's life cycle and the product's economic performance at the same time.

3. Observance of Corporate Social Responsibility

Each company of the Komatsu Group promotes environmental conservation by not only complying with the applicable laws and regulations of the concerned host community, region and country but also by establishing its voluntary standards which consider global and local environmental concerns. Each company of the Group also strives to fulfill its corporate social responsibility by actively participating in local environmental conservation programs and thereby promoting close-knit communication with local communities, while striving to become a company trusted by all Komatsu stakeholders.

Guidelines for Corporate Activity

1. Basic Stances on Earth Environmental Problems

We, at the Komatsu Group, work for sustainable society and earth environment through our global business operations by addressing the following four environmental problems with the stances discussed below.

1)Climate Change

We will reduce the use of energy and emissions of greenhouse gas in all phases of our business activities ranging from research and development, procurement, production and logistics to sales and service as well as in the total life cycle of our products and services.

2)Establishment of a Sound Material-Cycle Society

Through our business processes, we work to minimize the use of natural resources, such as materials and water, promote their re-use or recycle them as much as possible, and expand Zero Emissions from our manufacturing activities around the world. At the same time we ensure the thorough management of waste materials in all our business domains, including our suppliers and distributors. We also continuously work to increase the recyclability rate of products at the time of disposal.

3)Conservation of Air, Water and Other Environments as well as Management of Chemical Substances

We comply with not only local laws and regulations but also with our established standards concerning the conservation of water quality, prevention of air pollution, noise and vibrations.

As much as possible, we also ensure the thorough management of chemical substances for use in our business activities, while continuously reducing the use of potentially harmful chemical substances or replacing them with alternative substances for discontinuation of their use.

4)Biodiversity

We recognize biodiversity as one of the important issues concerning the earth environment, evaluate, understand and analyze impact on it in all our business domains, and work on our tasks according to the criteria of the highest impact and/or the most effective actions.

2. Framework of Global, Group-wide Environmental Management System

The Komatsu Head Office, as well as the manufacturing facilities and main companies of the Komatsu Group, already with ISO certifications, will work to maintain and improve their environmental management system, while other manufacturing facilities and suppliers will also work to establish their environmental management systems and reduce their environmental impact.

The Komatsu Environmental Committee develops environmental action plans and common guidelines for the Komatsu Group. Based on these Group-wide plans and guidelines, each division or company sets up its own mid- to long-term targets, develops and implements specific action plans, reviews them regularly and works to continuously improve them.

3. Environmental Education and Communication

We believe that it is important to enhance the environmental awareness of each and every employee and thereby actively promote environmental awareness and education programs for all employees.

We will gather environment-related information concerning not only our manufacturing facilities but also other related entities, such as major affiliated companies and suppliers, and strive to disclose such information, thereby

facilitating proactive communication with all our stakeholders, such as customers, employees, local communities and suppliers and further expanding the content of environmental communication.

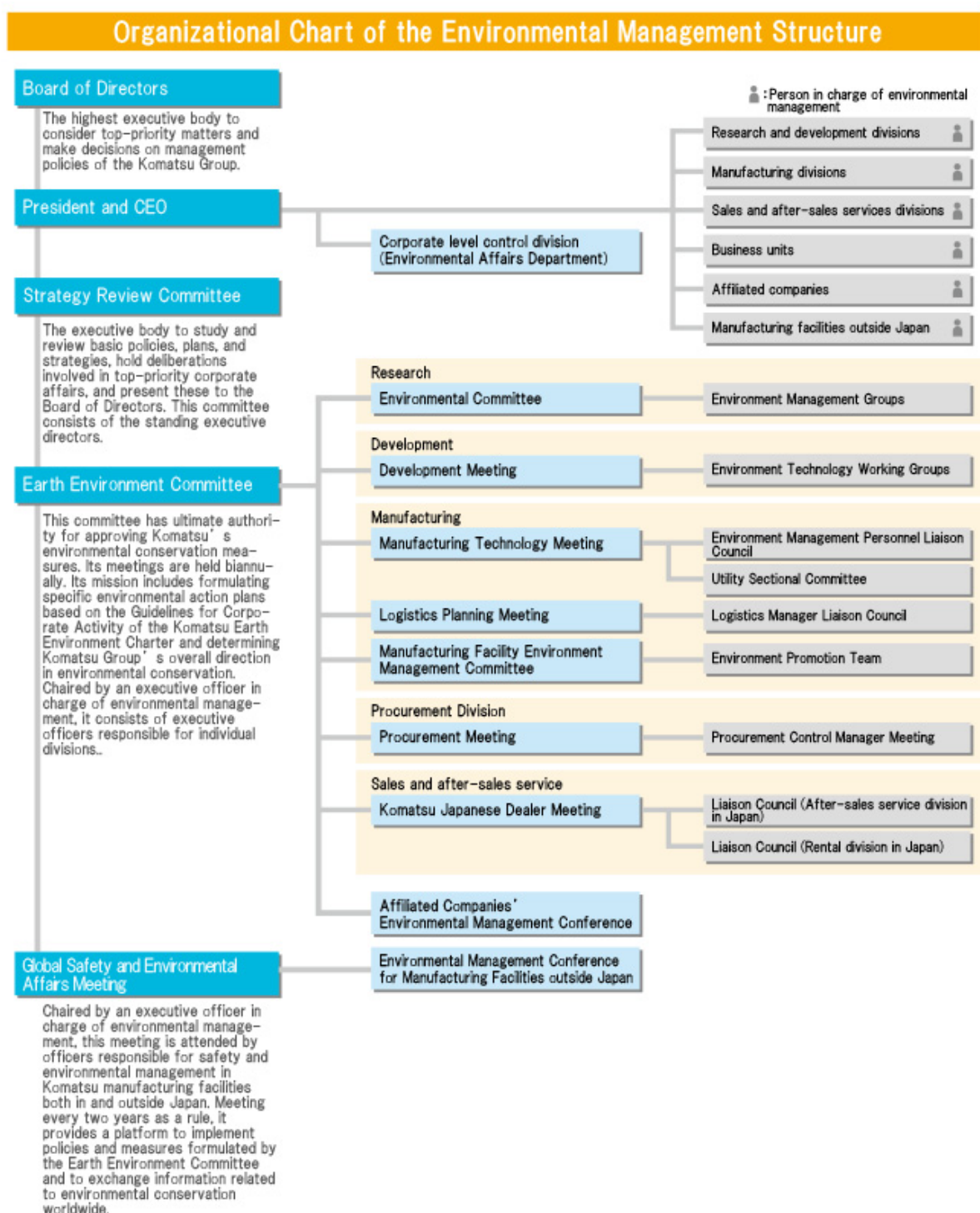
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Pursuing Environmental Management

Organizational Chart of the Environmental Management Structure



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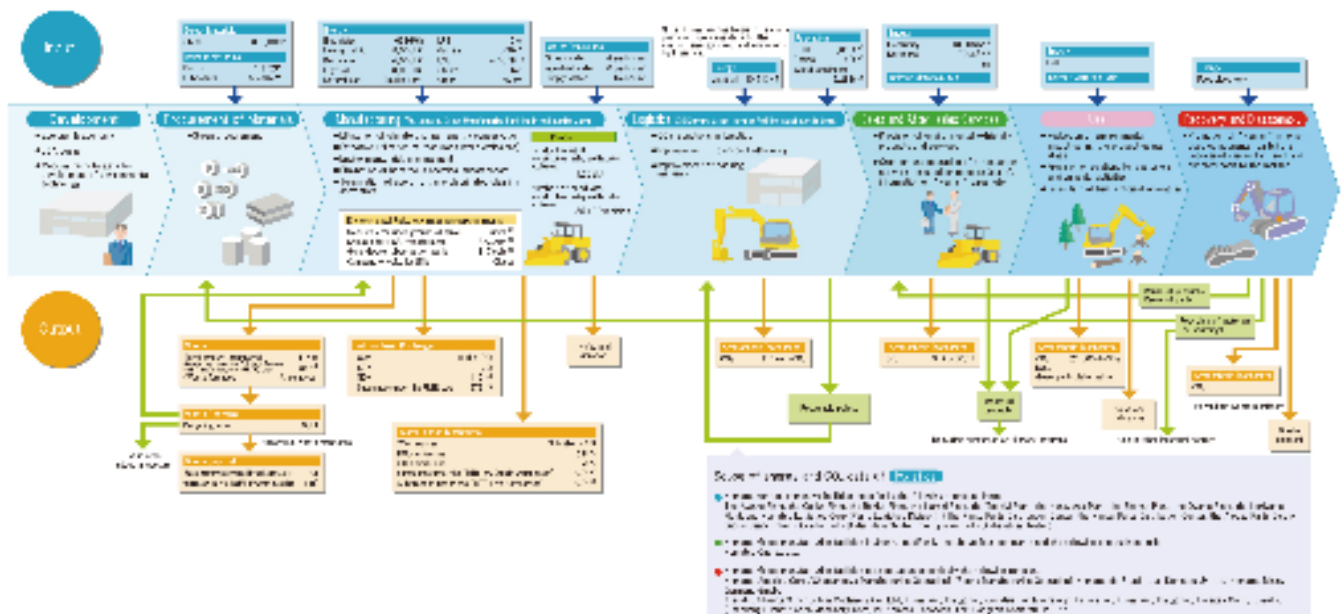


Pursuing Environmental Management Relationship between Business Activities and the Environment

The Komatsu Group procures various parts and materials and, through the manufacturing process, utilizes the earth's resources, including raw materials, water, energy, and chemical substances, among others, to provide products to customers. Such business activities have the potential to impact the environment at each stage in the process.

The Komatsu Group will continue to provide high value-added products and services while assessing the environmental impacts resulting from its business activities, formulating medium- and long-term objectives, and introducing measures to reduce such impacts.

Environmental Impact Resulting from Business Activities of Komatsu Group Companies, including Facilities outside Japan (FY2012)



You can see expanding figure by clicking figure above.

CO₂ emissions: Calculated by multiplying the electric power, heavy oil, etc. consumed (see Energy section of Input column) by the CO₂ emission coefficient (according to the Greenhouse Gas Emissions Calculation - Reporting Manual of the Ministry of the Environment based on the Act on Promotion of Global Warming Countermeasures)

SO_x emissions: Calculated by multiplying the "S content by percentage" (based on element tables of suppliers) by the amounts of heavy oil, kerosene, light oil, and coke used.

NO_x emissions: Calculated by multiplying the "nitrogen oxide emissions units" (obtained at each Komatsu facility) by the amounts of heavy oil, kerosene, light oil, natural gas, and LPG used.

Emissions and transfer of substances covered by the PRTR Law: Calculated by the "content ratio of specific chemical substances" contained in indirect materials multiplied by the "discharge or transfer rate." This calculation is based on the PRTR Law, which was designed to mandate the disclosure of the amount of specific chemical substances released into the environment to promote the management of such substances.

Scope of energy and CO₂ data of logistics

- **Komatsu (parent company) facilities**, specifically the following fourteen plants

The Awazu Plant, the Osaka Plant, the Rokko Plant, the Ibaraki Plant, the Tochigi Plant, the Kanazawa Plant, the Shonan Plant, the Oyama Plant, the Koriyama Plant, and Komatsu Logistics Corp (Parts Logistics Division)(The Kanto Parts Distribution Center, the Kansai Parts Distribution Center, the Awazu Parts Distribution Center, the Hokkaido Parts Distribution Center, the Kyusyu Parts Distribution Center).

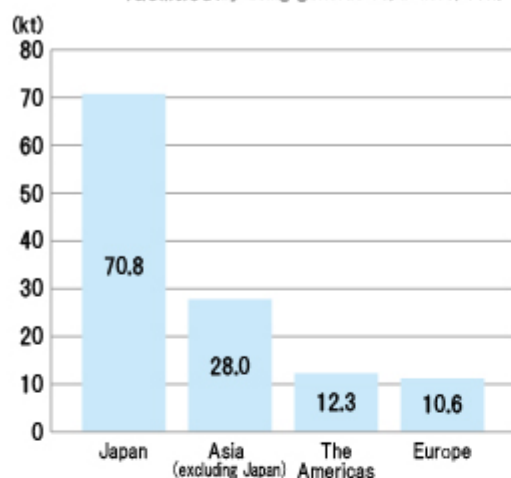
- **Komatsu Group manufacturing facilities in Japan**, specifically the above fourteen plants and the following one business unit
Komatsu Castex Ltd.

- **Komatsu Group manufacturing facilities outside Japan**, specifically the following ten plants
Komatsu America Corp.,[Chattanooga Manufacturing Operation], [Peoria Manufacturing Operation],
Komatsu do Brasil Ltda., Komatsu UK Ltd., Komatsu Mining Germany GmbH,
Komatsu Shantui Construction Machinery Co., Ltd., Komatsu (Changzhou) Construction Machinery Corporation, Komatsu (Changzhou) Foundry Corp., Komatsu (Shandong) Construction Machinery Corp,
PT Komatsu Indonesia Tbk, Bangkok Komatsu Co., Ltd..

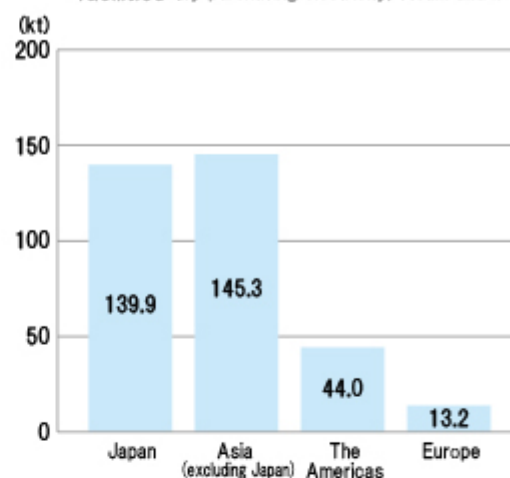
Environmental Impact Indicators by Region

CO₂ Emissions by Scope

Scope1 : CO₂ emitted directly by manufacturing facilities (by using generators, boilers, etc.)

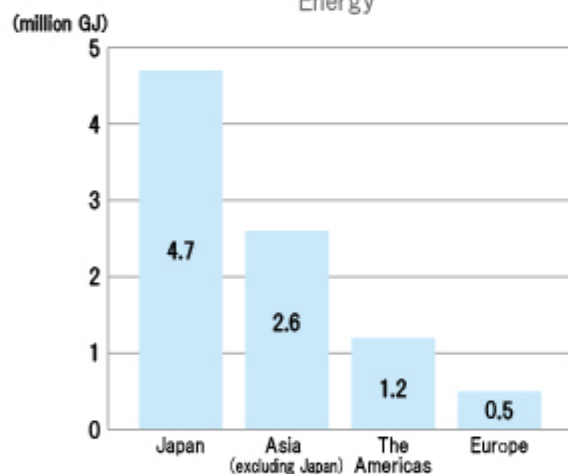


Scope2: CO₂ emitted indirectly by manufacturing facilities (by purchasing electricity, steam and hot water)

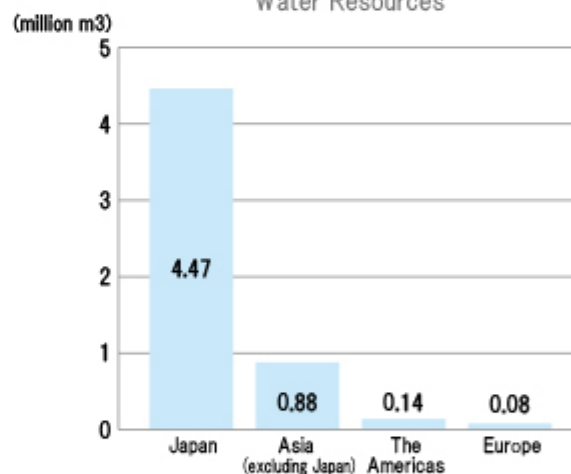


Environmental Impact Indicators by Region

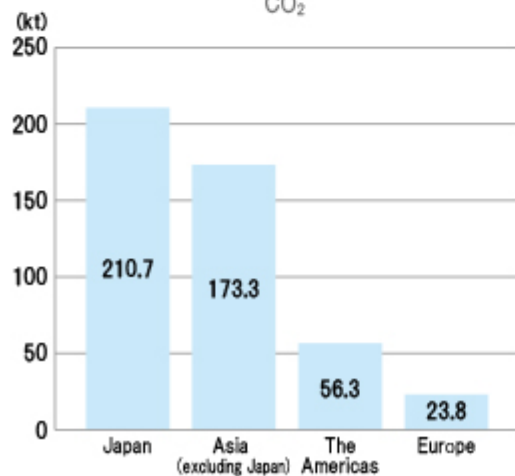
Energy



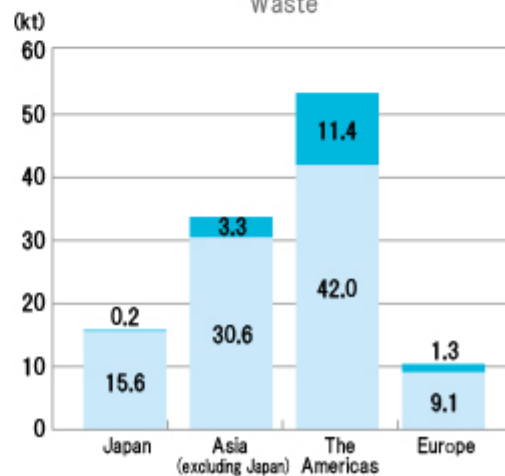
Water Resources



CO₂




Waste



■ Recycled amount ■ Disposal amount

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Pursuing Environmental Management Acquiring ISO14001

Komatsu has implemented a Group-wide initiative to acquire ISO14001 certification, an international standard for environmental management systems. The objective is to enhance management quality by strengthening systematic steps towards environmental conservation.

Since 1997, several manufacturing facilities both inside Japan and abroad received certification. In FY2005, the four plants belonging to Komatsu Ltd. (the parent company), the Awazu, Osaka, Mooka, and Oyama Plants, acquired integrated certification. As the second step, in FY2007 Komatsu added its major affiliates in Japan and yet-to-be-certified non-manufacturing facilities – notably the Head Office – to the above four plants, with integrated certification attained by the Group in Japan in May 2008.


Upon completing the March 2012 recertification, the KOMATSU Way Global Institute and Komatsu NTC Ltd. were included in the integrated certification. The Group seeks to raise the level of management in Japan.

Komatsu aims for 100% of overseas production facilities to acquire certification by FY2015.



●● ISO14001 Integrated Certification

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Pursuing Environmental Management Environmental Inspection

Environmental Inspection of East Europe Branches

Based on Komatsu's "Earth Environment Basic Policy", environmental protection guidelines are established for the purpose of improving the level of environmental protection and reducing environmental risks in developing countries.

International subsidiaries in China (2007), Thailand (2009), Indonesia (2009), India (2010), Brazil (2011), Russia (KMR, 2012), and the Czech Republic (Stavmek s.r.o., 2012) were visited. Environmental facilities were inspected and opinions exchanged on environmental protection. In addition, the sites of contracted industrial waste disposers were inspected.

Both companies (KMR and Stavmek) complied with local laws and carried out periodic atmospheric and water quality monitoring as well as separation of industrial waste. Stavmek was active in energy conservation measures such as switching to higher efficiency lighting to LEDs, renewal of transformers and boilers, and utilization of compressor exhaust heat.

We will continue to inspect international subsidiaries to improve the environmental efforts of Komatsu group.



Environmental Inspections of the Chinese Subsidiary

From FY2010, audits of the compliance risk of international subsidiaries were carried out. In FY2012, a follow up audit to the previous year was carried out in China (KCCM and KSD). Although there were some tasks remaining from the areas designated for improvement by the last audit, these matters were resolved in the improvement plan submitted and confirmed at a later date.

Also at KCCM, full participation environmental activities were implemented such as environmental speeches by plant managers at morning meetings and beautification days.

We will continue to follow up with audits and also carry out environmental audits at other regional subsidiaries.



●● KSD Follow Up Inspection

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Pursuing Environmental Management Scope 3 Category 11

From actual data gathered by one of our group companies, KOMTRAX, Komatsu has gained perspective on the amount of CO₂ emissions (Scope 3 Category 11) produced by our products in operation world-wide. The calculation was performed as follows.

Calculation of Emissions from Customer Use

(1) Calculate the following by each model

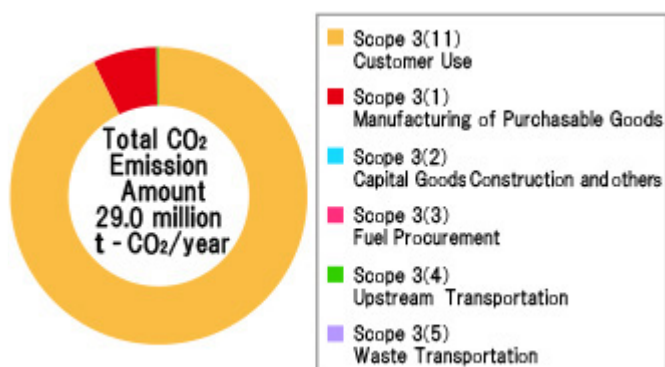
CO₂ emissions over the life of each model

$$= (2012 \text{ Production Volume}) \times (\text{Fuel Consumption; L/kWh}) \times (\text{Engine Output; kW}) \\ \times (\text{Engine Life; as product life; h}) \times (\text{CO}_2 \text{ Conversion Factor})$$

(2) Calculated for each model in (1) above, Total these values

*For models available to collect fuel consumption, KOMTRAX collected the actual values of fuel consumption and operating time from representative models of each size. We back calculated data from development for other models.

For others, including the 14 remaining categories, the general CO₂ emissions was calculated. The result is shown in the pie chart below.









*1 :LCA is the environmental impact assessment method for individual products at each stage, from manufacture, transportation, sale, use, disposal, to reuse

*2 :Scope1 is direct CO₂ emissions by operator(ex: private power generation)

*3 :Scope2 is indirect CO₂ emissions by operator(ex: power purchase)

*4 :Scope3 is CO₂ emissions by operator from supply chain (ex: emissions of product during operation, emissions from suppliers, transportation, business trips and commuting)

Amount of CO₂ Emissions Data by Scope 3

Category	Rate %	Summary Data t-CO ₂
Scope3(11)Customer Use	91.8	Third party verification  26,600,000
Scope3(1)Manufacturing of Purchasable Goods	6.5	Third party verification  1,887,573
Scope3(2)Capital Goods Construction and others	0.9	Third party verification  255,001
Scope3(3)Fuel Procurement	0.3	Third party verification  81,420
Scope3(4)Upstream Transportation disposal	0.1	Third party verification  38,674
Scope3(5)Waste Transportation	0.0	Third party verification  7,353
Scope3(6)Business Trips	0.1	Third party verification  23,850
Scope3(7)Commuting	0.1	Third party verification  16,647
Scope3(8)Upstream Leased Assets Operation	0.0	0
Scope3(9)Downstream Transportation	0.2	Third party verification  62,867
Scope3(10)Processing Sold Products	0.0	0
Scope3(12)Transportation for Product Disposal	0.0	0
Scope3(13)Downstream Leased Assets Operation	0.0	0
Scope3(14)Franchise Member Companies	0.0	0
Scope3(15)Investment Management	0.0	0
Total CO ₂ Emission Amount (t-CO ₂ /year)	100.0	28,972,842

- Although it is calculating in the total range of domestic and an overseas in calculation of each category, the category (4) and (5) is calculating only domestic data. Moreover, presumption of a category (3) goes into overseas data in part.

As evident from the results above, emissions during product use makes up more than 90% of total emissions. This is almost the same result as the estimates for 2007.

(See page 13 of Environmental and Social Report 2008)

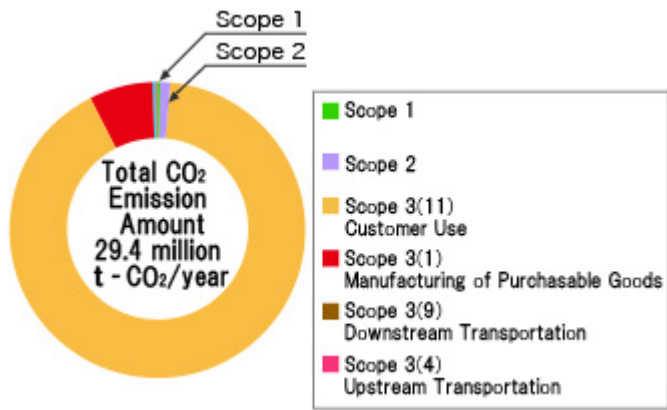
From this, we can see that fuel-efficient products have a significant effect on reducing CO₂ emissions.

Komatsu is committed to developing hybrid construction machinery (improving fuel efficiency by 25%) and DANTOTSU products (over 10% improvement in fuel efficiency).



In addition, the result of the understanding in the LCA * 1 (Life Cycle Assessment) is the pie chart below.

«Reference»

Pie Chart of Scope1, 2, 3



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Pursuing Environmental Management

Komatsu's International Initiatives through the Environment

WBCSD Activities

Komatsu supports and participates in the activities of the WBCSD (World Business Council for Sustainable Development). The WBCSD was established in 1995 with CEO level participants from over 200 companies worldwide (as of March 2012) with headquarters in Geneva, Switzerland. The guiding principle of WBCSD activities is to evaluate what businesses can do to realize a society with low environmental impact developing ideas to achieve sustainability, and evaluating and implementing solutions from the business world.

In fiscal year 2012, Komatsu participated in the Liaison Delegates Meeting held in the spring in Montreux, Switzerland and the Council Meeting held in the autumn in Seoul, South Korea.

Komatsu is participating in environmental entrepreneurship on a global scale and thinking even further ahead as a Japanese construction machinery manufacturer to evaluate what we can do to realize a sustainable society.

WBCSD Ecosystem

Komatsu participates in WBCSD activities. WBCSD is the voice of global businesses with the power to disseminate information to people of the world; Komatsu's activities for biodiversity conservation at the Oita testing site were introduced in a WBCSD report.

«References»

(WBCSD Report pages 24-25)

[Biodiversity and ecosystem services scaling up business solutions !\[\]\(a8f9309f944226d1420f5fed22e2b6e6_img.jpg\)](#)

(WBCSD Report page 24)

[Picking up the Pace - Accelerating public policies for positive outcomes !\[\]\(899d8b7697d64725bf017d3296cfcf1b_img.jpg\)](#)

Rio+20

Komatsu contributed to the Japan pavilion set up by the Japanese government to accompany United Nations' environmental conference Rio+20 (United Nations Conference on Sustainable Development) held in Rio de Janeiro, Brazil. This conference was held to commemorate 20 years since the Earth Summit, which was also held in Rio de Janeiro in 1992. Heads of state, ministers and people from the general public visited the Japan pavilion where Komatsu's "CSR & Environmental Report 2011" was distributed. It was a good opportunity for Komatsu to publicize its environmental initiatives to the world.




●● Rio+20 held in Rio de Janeiro

COP18

Komatsu participated in UNFCCC's (United Nations Framework Convention on Climate Change) 18th session of the Conference of the Parties. At the conference which took place in Doha, Qatar, Komatsu participated as a member of Japanese industry. Komatsu will continue to confront climate change issues and have initiative.

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Pursuing Environmental Management

Promoting Environmental Activities at Group Sales and Rental Agencies

Komatsu's support for environmental activities extends to forklift sales agencies, as well as construction machinery and rental companies, through education and guidance on ways to enhance environmental management.

The Environmental Guidelines for Sales Agencies comprise guidelines and standards pertaining to environmental issues that are of direct relevance to operations at sales agencies and rental companies. These include waste treatment, waste-oil treatment, oil-and-grease management, and treatment of wastewater from vehicle washing.


Komatsu assists sales agencies and rental companies in meeting the provisions of the Environmental Guidelines. The company also assists in reviewing the environmental aspects of operations, conditions, and equipment at the relevant business sites of the agencies and companies, gives on-site guidance, and proposes remedial actions that are tailored to each site. This is done through joint visits to the sites by persons in charge of environmental management at Komatsu and at the sales agencies and rental companies.

(In FY2012, 106 sites received this assistance.)

As a result, awareness of the environment has risen at agencies and companies, and various improvements are underway.

In addition, Komatsu Construction Equipment Sales and Service Japan Ltd. plans to implement a waste management system for law-abiding management of waste and is promoting the efficient management of waste in conjunction with introducing an electronic manifesto. To this effect, group sales and rental companies sustain a heightened awareness concerning the environment and continue to undertake improvement activities.

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Mitigating Climate Change

Developing the Latest Engine Technology

New emission control regulations for construction machinery in Japan, the United States and Europe are stringent, requiring the reduction of NOx and PM emissions to 1/10 of previous levels. In order to afford regulated entities sufficient time to develop new technology to comply with the more stringent standards, the regulatory agencies in Japan, the United States and Europe coordinated to implement changes in two stages.

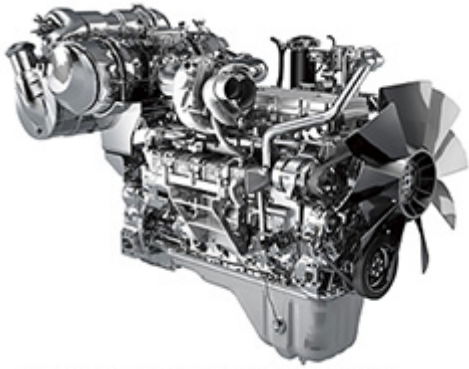
The first stage of regulations went into effect in 2011. To comply with these regulations, Komatsu developed and produced the Komatsu Diesel Particulate Filter (KDPF), which is an emission aftertreatment device designed to reduce PM emissions to 1/10 of pre-2011 levels. The second stage of regulations will begin in 2014 and require reductions in NOx to 1/10 of pre-2011 levels.

Typically lowering combustion temperature to reduce NOx emissions leads to increased PM emissions and fuel consumption. Construction machinery engines, NOx and PM must be reduced simultaneously and also reduce fuel consumption. Also, construction machinery engines that are used in harsh environments need to perform at maximum output/torque with high reliability and durability.

To respond to these needs, Komatsu developed and produced a urea NOx reduction aftertreatment device designed primarily for construction machinery. The device uses a unique catalyst with structure, functions and controls tailored to the unique characteristics of construction machinery. Komatsu will gradually introduce into the market products that are compliant with the 2014 regulations.

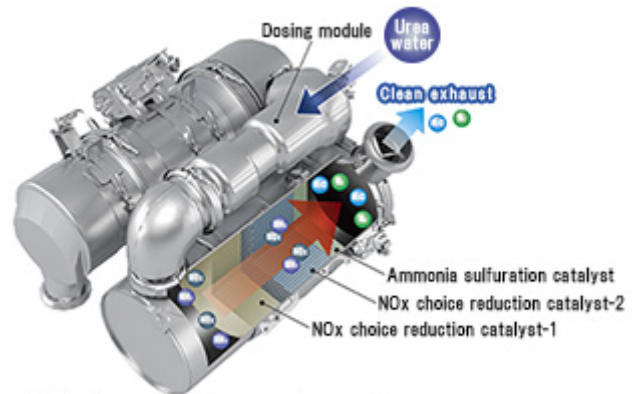
Also, to comply with the 2014 regulations, we leveraged our in-house development and production expertise for engines, hydraulic machines, control systems and the main unit to design the engine and body as a total package in order to produce engines that can be maximally effective under a variety of conditions. Komatsu's unique expertise in engine technology combined with the latest technology make it possible to reduce environmental burdens while being economical.

- Including some joint products with Cummins Inc.



※Photo created using computer graphics



- New engine compliant with the next phase of emission controls in Japan, the United States and Europe



※Photo created using computer graphics

- Exhaust postprocessing system

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Mitigating Climate Change

Line Up of Tier4 Machinery

Releasing brand new model installed with new generation engine

Komatsu continues equipping hydraulic excavators, bulldozers, articulated dump trucks, and wheel loaders with next generation engines that greatly reduce NOx (nitrogen oxide) and PM (particulate matter) emissions that meet the emissions controls of Japan (Emissions from Non-Road Special Motor Vehicles 2011 Standards), North America (EPA Tier4 Interim), and Europe (EU Stage 3B). Also, by optimizing engine controls in response to operational conditions, productivity has improved and fuel consumption has been reduced by **up to 14%** compared to previous models (*1).



●● Hydraulic Excavator PC210LC-10



●● Bulldozer D155AX-7



●● Articulated Dump Truck HM300-3



●● Wheel Loader WA500-7

1* Compared to previous company models (company benchmarks). In actual usage work conditions may vary.

«Line up»

■Hydraulic excavator

Japan PC200-10 / PC220LC-10 / PC350-10 / PC450-10

North America PC138US-10 / PC210LC-10 / PC240LC-10 / PC290LC-10 / PC360LC-10 / PC490LC-10

EU PW180-10

■Bulldozer

D37EX-23 / D37PX-23 / D39EX-23 / D39PX-23 / D61EX-23 / D61PX-23 / D65EX-17 / D65WX-17 / D65PX-17 / D155AX-7

■Articulated dump truck

HM300-3 / HM400-3

■Wheel loader

WA270-7 / WA320-7 / WA380-7 / WA470-7 / WA500-7

Supporting Safety and Reliability

A 7-inch high resolution LCD display is used for the driver's seat to support energy efficient operation and check behind the vehicle with a color rearview display for safe, precise, and smooth operations.

Offering KOMATSU CARE (*2) automatically applied to all new vehicle purchases contributes to lowering total lifecycle costs and longer operations.

Komatsu implements support to maintain high quality and reliability for long-term usage and contribute sustaining the "trust" of our customers

2* KOMATSU CARE

A new vehicle warranty program consisting of free and paid programs.



- High Resolution 7 Inch Display




- Color rear view monitor for the security backside of the vehicle

«Reference site»

[Environmental Servicing Programs for the Latest Machinery \(KOMATSU CARE\)](#)

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Mitigating Climate Change

Hybrid Hydraulic Excavators Surpass 2,000 Units in Sales

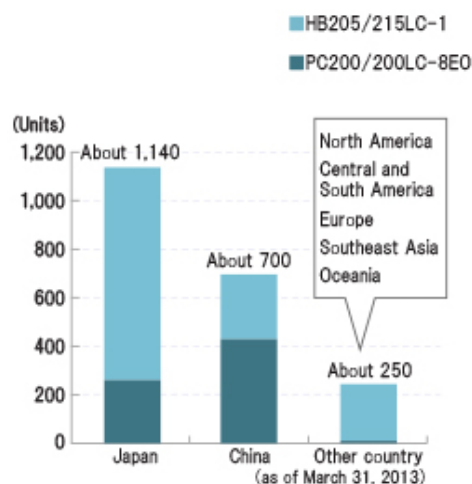
In 2008 Komatsu released the PC200-8E0, the world's first mass produced hybrid hydraulic excavator. Since 2008, Komatsu's domestic sales of the PC200-8E0 have surpassed 2,000 units.

In 2010 Komatsu released the follow up model HB205-1, and at the end of 2012, a minor upgrade, the HB205-1M0, was made to improve fuel efficiency. Following the PC200 class, this year of 2012 the PC300 class will be sold.

We will continue to develop and promote environmental-friendly construction machinery.




●● Hybrid Hydraulic Excavator HB205-1



●● Marketing Record for Hybrid Hydraulic Excavator

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Mitigating Climate Change

Autonomous Haulage System (AHS)

The Autonomous Haulage System (AHS) consists of unmanned dump trucks, manned non-truck vehicles, and an operation management system that manages the entire mining operation, allowing for fleet operations with fewer personnel.


It not only frees workers from harsh labor conditions, but also makes it possible to reduce costs. Additionally, the AHS improves safety by greatly reducing the number of accidents due to human error.

In addition, the system's optimized automatic controls reduce sudden acceleration, revving, and abrupt steering resulting in greater fuel efficiency (L/H) and tire life compared to manned operations in general.



Unmanned dump trucks managed and operated by AHS

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Mitigating Climate Change

New Hydraulic Drive Forklift FH Series

The new forklift models FH40-1, FH45-1, and FH50-1 announced in July 2012 are more environmental-friendly and easy to operate. Komatsu has received 200 orders for these models as of March 2013. The electronically controlled Hydro-Static Transmission (HST, hydraulics powered transmission) technology, developed by Komatsu achieves unprecedented fuel efficiency by reducing fuel consumption by up to 30% compared to our previous models. The new forklift models are equipped for the first time with KOMTRAX, a remote equipment and fleet monitoring system, to support our customers fleet management operations. Trial units are currently being tested abroad in the United States, CIS, and Indonesia, with great feedback on their low fuel consumption.

In February 2013, Komatsu was awarded the Japan Machinery Federation Chairman Award given in recognition for the development or application of industrial machinery with significant energy conservation effects.





■■ Hydraulic drive forklift FH50



■■ Japan Machinery Federation Chairman Award plaque

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Topics

Biodiesel Fuel (BDF) Project

The Biodiesel Fuel (BDF) Project produces BDF from raw materials such as jatropha and other non-edible plants that can grow on oligotrophic ground at the Adaro Mine on Kalimantan Island in Indonesia. The project is intended to reduce greenhouse gas emissions by fueling Komatsu dump trucks, with a 90 ton load capacity, with BDF instead of light oil. Because BDF is carbon neutral, use of fuel that is comprised of 20% BDF and 80% light oil (B20) can reduce CO₂ emissions by up to 20%.

Komatsu strives to ensure BDF quality (European Standard EN 14214) through lab analysis and quality assurance, which includes 6,000 hours of real-world car testing with B20.

In addition, Komatsu received a commission to carry out a feasibility study for the establishment of bilateral offset policies ("Study for Policy Proposals and the Establishment of MRV Methodology Regarding Technology Development and Promoting Adoption Biodiesel Fuel (BDF) in Indonesia") as part of the Ministry of Economy, Trade and Industry's "2012 Global Warming Mitigation Technology Promotion Project." The feasibility study concluded that after offsetting the CO₂ emissions from the BDF refining, CO₂ emissions would be reduced by at least 10,000 tons annually (at a scale of 100 dump trucks).

This project has great potential for the development of both country's industries and is an environmental-friendly business model based on sustainable local production for local consumption.

1 HD785 operation using B20 fuel



2 Disposal site for top soil




4 Cultivation of BDF material crops

3 Refinement of BDF



Enhancing Quality of Life

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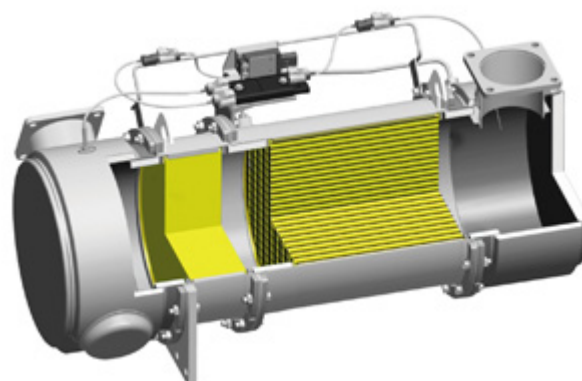


Mitigating Climate Change

Environmental Servicing Programs for the Latest Machinery

KOMATSU CARE

"KOMATSU CARE" is a new service program that comes with new vehicular purchases for machinery equipped with an engine that meets emission controls of Japan, North America, and Europe. In addition to the usual standard warranty (1 year), it comes packaged with extended powerline warranties consisting of free and paid programs as well as maintenance. We will continue contributing to high quality extended uptime through services optimized for the latest environmentally compliant machinery.



- The program includes cleaning of the KDPF (Komatsu Diesel Particulate Filter), a new component equipped to meet strict emission controls.

Services provided in Japan ※variation according to the countries

Paid New Vehicle Warranty



1. Powerline※ extended warranty

Covers 3 years or 5,000 hours of operation

※ Powerline: engine, power equipment, and hydraulic equipment

2. Free maintenance


● Engine oil & engine oil filter replacement (every 500 hours up to 2,000 hours (4 times))

● KDPF cleaning (free for one time upon reaching 4,500 hours)



Free Maintenance package program

Enhancing Quality of Life

Third party verification  CSR Themes **1**



Mitigating Climate Change


Introducing to the Market the Fiber Laser Cutting Machine

Komatsu Industries Corp and Komatsu NTC Ltd. developed a fiber laser processing machine with exceptional laser oscillation efficiency and beam characteristics, and launched the "KFL Series" in May 2013. For cutting 1mm thick stainless steel, this technology boasts half the power consumption compared to that of the CO₂ laser, six times faster cutting speed, and realized a 93% less reduction consumption for the same amount of cutting. In addition, the full cover structure over the entire machine ceiling ensures high level of safety.



■ ■ ■ KFL2051

Enhancing Quality of Life

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Mitigating Climate Change



Introducing to the Market the Miniature Servo Press “H1F110-2”

With the adoption of the peak current suppression capacitor and the energy regeneration mechanism, the new servo press, "H1F110-2," reduced the amount of power consumption by 56.6%, as compared to previous mechanical press machines. In addition, the power supply capacity is 17KVA, which is equivalent to the capacity of comparable mechanical presses. This means that the new servo press can be installed without construction work to increase power capacity. The "H1F110-2" received the 2012 Japan Forming Machinery Association's MF Eco Machine Certification (registration number: MF-P007).



■ H1F110-2

Enhancing Quality of Life

Third party verification  CSR Themes 



Mitigating Climate Change

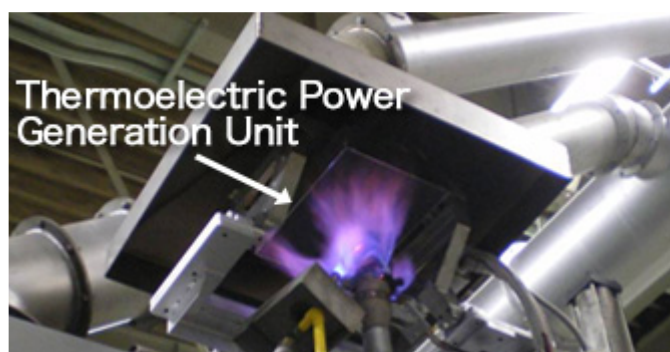
Thermoelectric Power Generation

The thermoelectric power generation module is a device that utilizes the Seebeck effect, where two different metals are connected and temperature difference is applied at the point of contact, which creates an electrical current that flows between the metals.

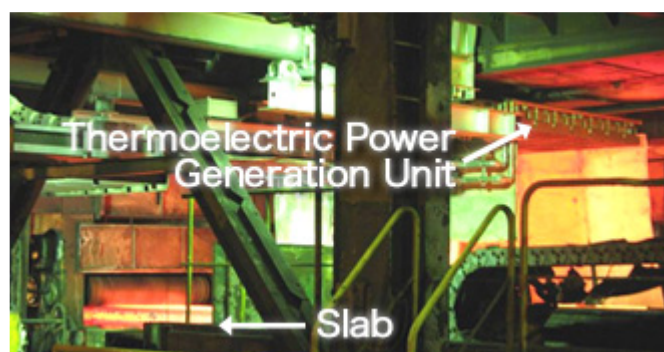
We are distributing this device through KELK Ltd. Through the heat-treating furnace at the Awazu plant, power is continuously generated and fed back into the power system.

In addition, we are participating in NEDO's (New Energy and Industrial Technology Development Organization) "Research and Development of a Thermoelectric Power Generation Technology using Heat Exhaust from Steel-making Process" project, and have begun 10kW class power generation verification tests with JFE Steel's continuous-casting machine.

Thermoelectric power generation could reduce CO₂ emissions by up to 1 million tons per year if plant heat exhaust recovery in Japan progresses, and grows to 50 percent.




●● Example of Verification Test in Heat-treating Furnace at Awazu Plant



●● Example of Verification Test with Continuous-casting Machine (Provided by JFE Steel)

Enhancing Quality of Life

Third party verification  CSR Themes **1**



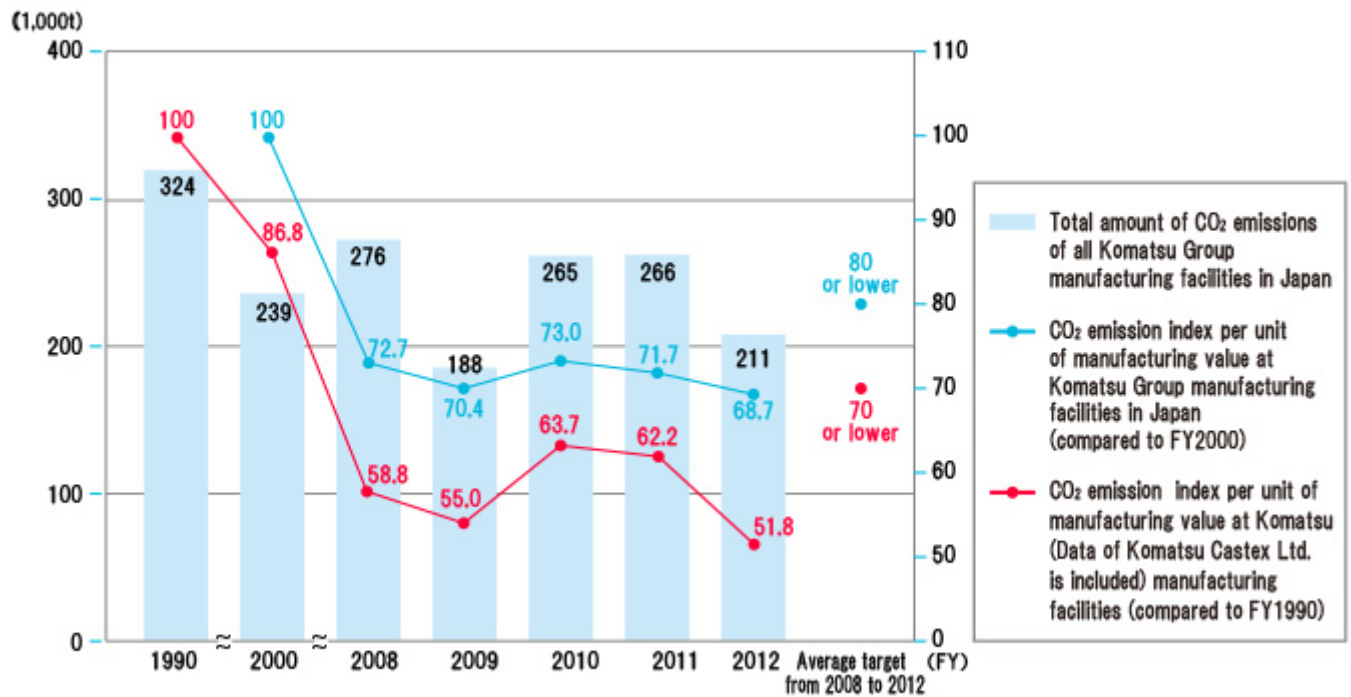
Mitigating Climate Change

Reducing CO₂ Emissions in Manufacturing Operations

As part of our efforts to mitigate climate change, Komatsu has adopted an indicator of CO₂ emissions per unit of manufacturing value with respect to the amount of electricity, fuel gas, fuel oil, and other types of energy used in manufacturing operations. The Company established aggressive mid to long term objectives in FY2007, setting a target of 20% reduction in average CO₂ emissions in FY2008 to FY2012, as compared to FY2000 levels.

In May 2012, medium-term goals had been for the 7th consecutive year, achieving a reduction in the averages between 2008 to 2012 at approximately 29% compared to FY2000 levels. The primary impetus came from enhanced production efficiency, which resulted from the inauguration of a new high-efficiency line and the removal of an obsolete line and from the horizontal deployment of various improvements from the "Company-Wide Energy Saving Project Group" deployed in May 2012, as well as from other measures.

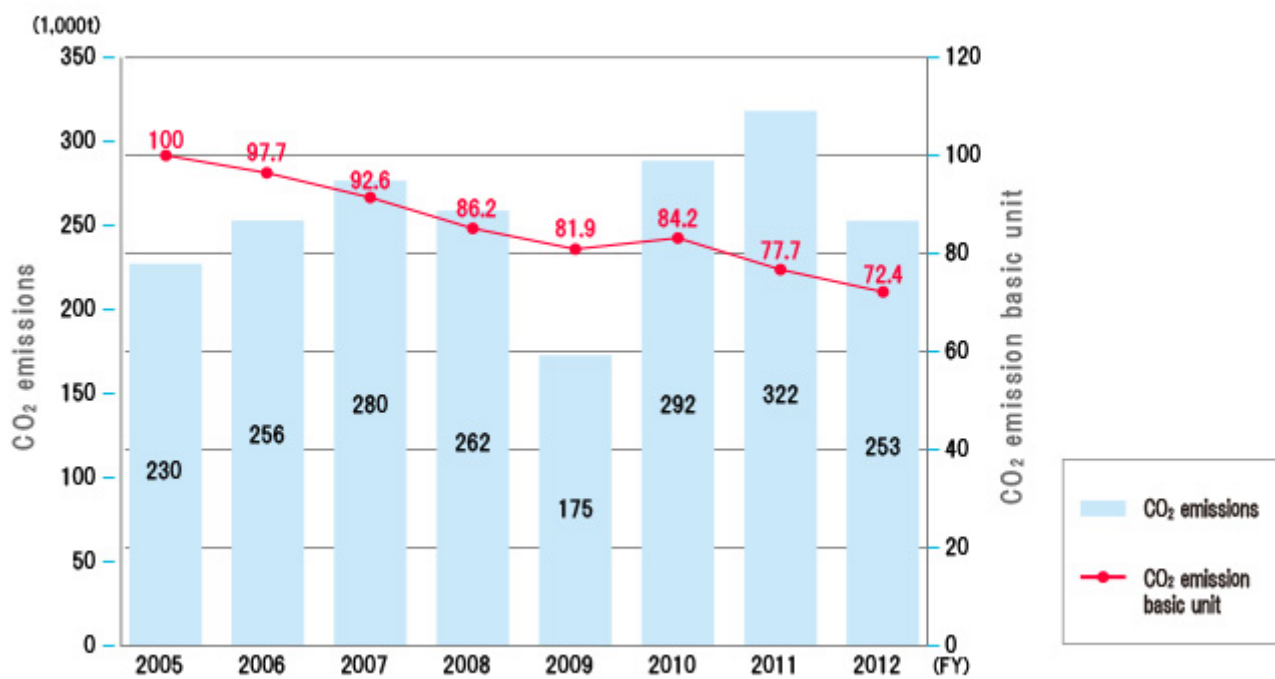
CO₂ emissions



Manufacturing value: Total production cost excluding direct material cost, other facilities' components, and procured components


Refer to "[Halving Electricity Usage Project](#)" of Mitigating Climate Change for the main action of the production section.

Reduction of the overseas CO₂



Basic unit: CO₂ emission Index per unit of manufacturing value at each manufacturing facilities, weighted by ratio of manufacturing value of each site.

Enhancing Quality of Life

Third party verification  CSR Themes ①



Mitigating Climate Change

Halving Electricity Usage Project

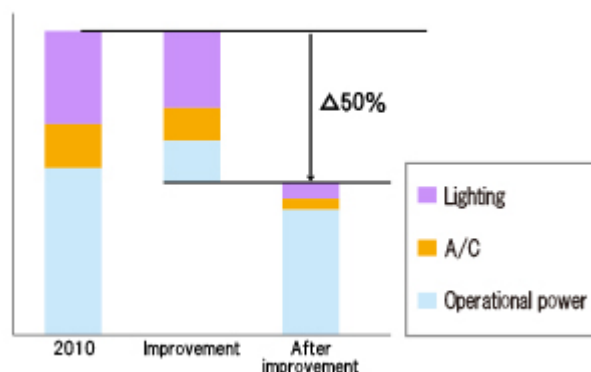
Power-Saving Activities

Komatsu has continuously pursued both productivity improvements and energy-saving activities.

After experiencing electric power shortages in the service areas of Tokyo Electric Power Co., Inc. and Tohoku Electric Power Co., Inc. several months after the Great East Japan Earthquake in 2011, it was anticipated that electric power shortages would occur in 2012 or later.

By detailed analysis of the use situation of electric power, it has discerned that it is possible to reduce 50% or more of electric power finally.

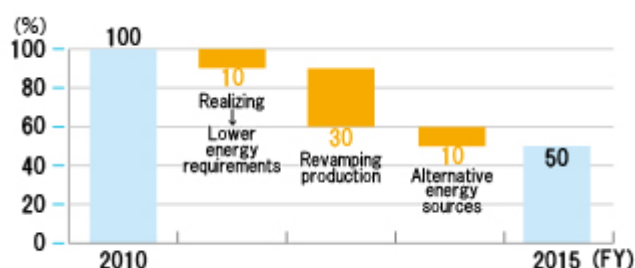
Our new goal is to cut summertime peak electric power needs by 50% compared to consumption levels in the summer of 2010. We plan to limit consumption to reduce the environmental impact.



Approach to Power-Saving

The fundamental methods for power reduction that we will use are:

- (1)Control use of electricity to eliminate waste by realizing lower energy requirements
- (2)Revamping production
- (3)Use alternative energy sources



(1) Reducing waste by realizing lower energy requirements

We construct a system that will automatically tracks power consumption by domestic Komatsu plants, and send this information to the head office, to be made available for company-wide viewing.

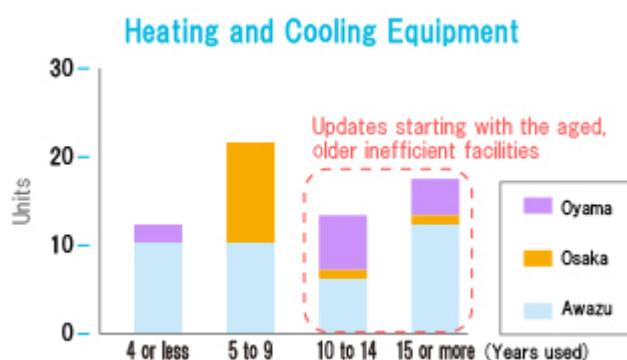
In addition we are working on making it possible to visualize in even more detail the power usage of each Komatsu building and facility.

Visualizing where power usage occurs will enable us to discover where power is being wasted, which facilities have poor energy efficiency, and the correlation between power usage and production activity. This will help us move ahead with our power-saving activities more effectively.

In addition, we are promoting our activities to visitors and conducting awareness campaigns to general staff through digital signage in places like the office lobby.



●● Centralized Monitoring of Power and Facilities



●● Improving Efficiency by Updating Facilities

(2) Production Reform: Reduce power usage by improving processing equipment and manufacturing processes

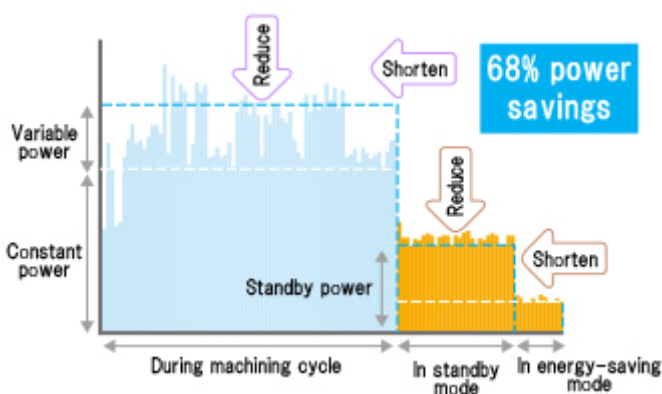
About 60% of Komatsu production plants' power consumption by processing parts.

Komatsu has several manufacturing processes including machine processing and welding. In each area we are working to reduce power usage by improving equipment, as well as by increasing efficiency in the manufacturing process.

Power Reduction with Production Equipment

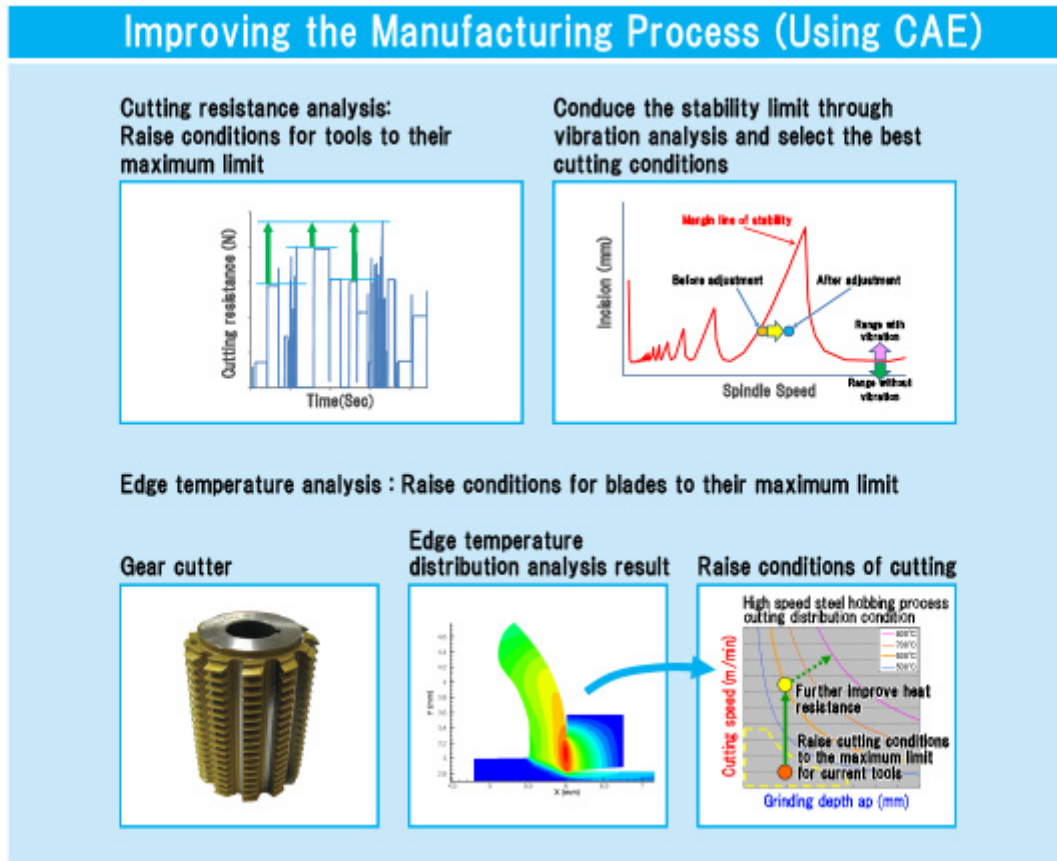
We can reduce power used during processing and idling with inverter control and fine-tuned stopping in auxiliary machinery such as pumps and motors.

We can also shorten both processing and idling times by improving processing speed and capacity utilization, machining time.



Improving the Manufacturing Process (Using CAE)

With the development of new production technology, we will reduce processing range and input energy. In addition, we will reduce power consumption by accelerating the updating of facilities with high-efficiency state-of-the-art equipment.



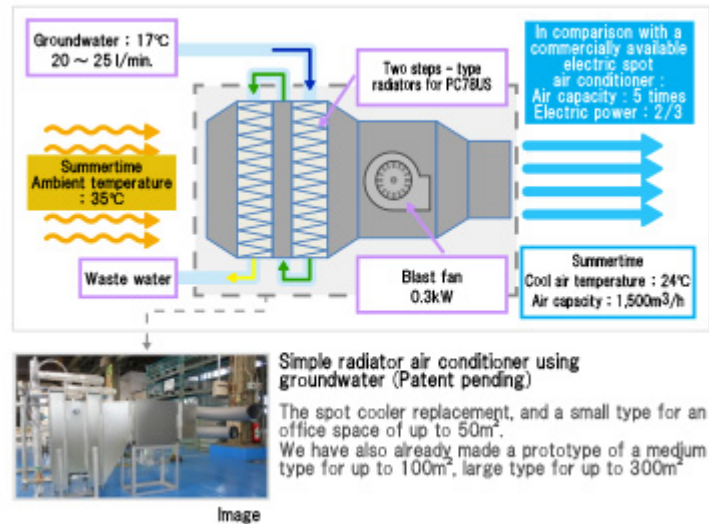
(3) Using alternative energy: Getting the most out of sunlight and groundwater

Komatsu has installed solar panels on the rooftop of buildings to generate solar power.

We are also working on finding ways of taking advantage of renewable energy, such as using the stabilized temperature of groundwater to help with air conditioning.



Awazu Development Center



New energy-saving buildings: Updating the buildings using the latest energy-saving technology

While implementing power usage reduction activities company-wide, we found that if we incorporate energy-saving technology in structures being rebuilt, it would be possible to reduce power consumption by about 50% in places such as office buildings and assembly plants, where the primary power consumption is due to lighting and air conditioning. Because over 60% of Komatsu production buildings were built over 40 years ago, there have been cases where the narrow spacing between posts inhibits the construction of efficient production systems.

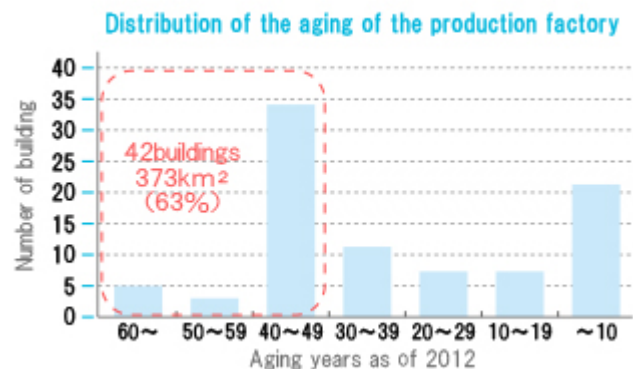
Therefore, we have decided to move forward with the integrated renewal of production buildings.

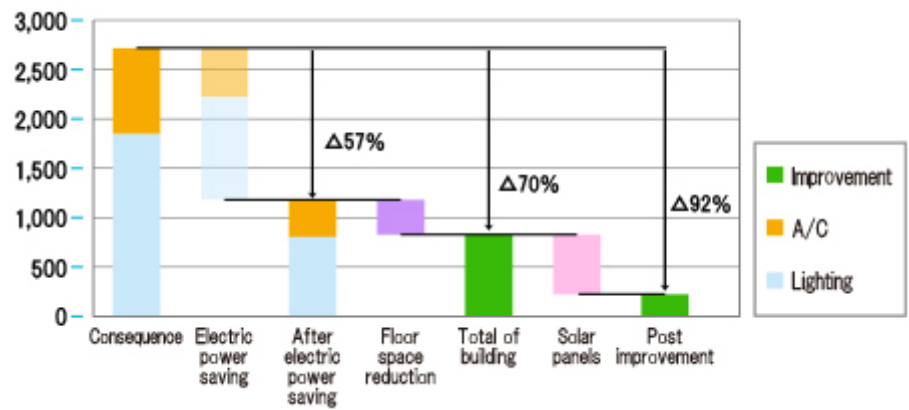
In addition to utilizing the latest energy-saving technologies, we are aiming for significant improvement in production efficiency by incorporating production reform (streamlining) and reducing power consumption by decreasing overall square footage of buildings.

Starting with construction on the Awazu Plant in 2013, we are expecting to invest 30-40 billion yen by 2020.

Basic Ideas

- (1) Use the latest energy-saving technology to achieve 50% reduction in power usage
- (2) Increase efficiency by production reform, and reduce size of facilities by 30%
- (3) Construct new buildings that use natural energy (sunlight, groundwater, etc.) more effectively






●● New Awazu Assembly Plant

●● Reduction in power usage at the newly rebuilt structure (Awazu Plant)

Enhancing Quality of Life

Third party verification  CSR Themes ①



Mitigating Climate Change

Reducing CO₂ Emissions in Logistics

Lower CO₂ Emissions of Global Transport

(Basic Unit of CO₂ Emissions per Cargo Weight)

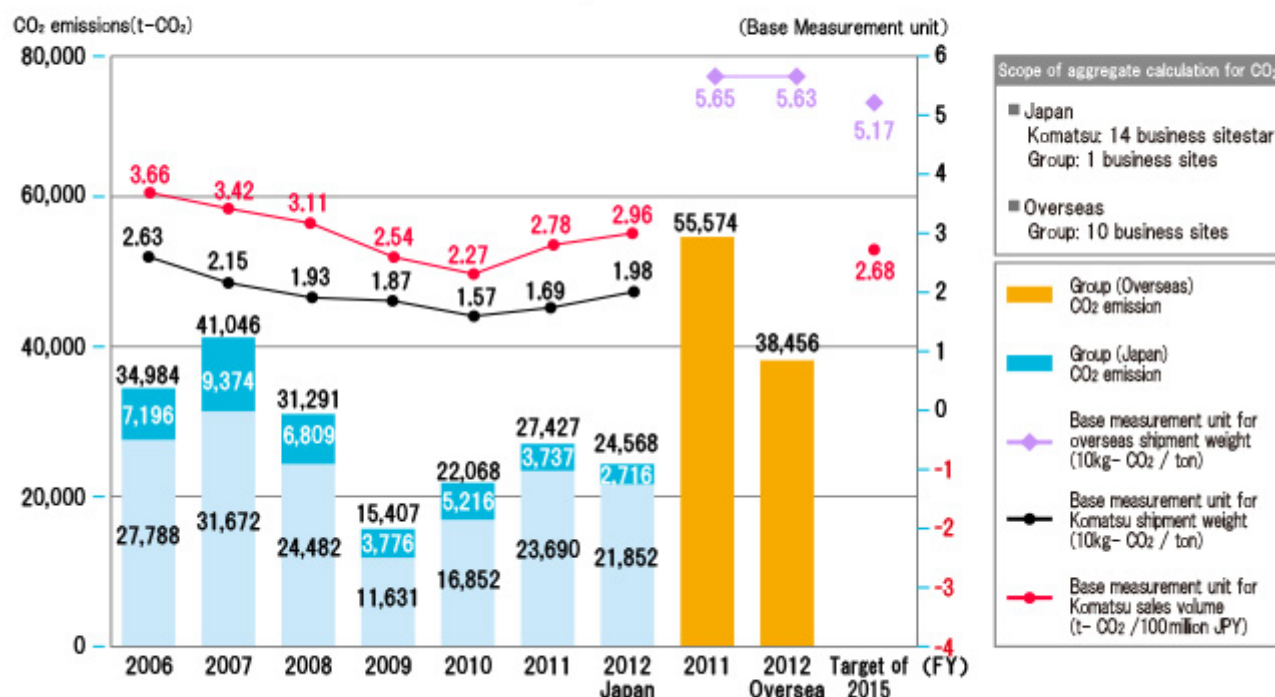
In 2011, Komatsu began improving its assessment of CO₂ emissions from logistics operations for its 10 major international business locations.

Improvements were made on a consolidated basis globally at all 25 business locations, including domestic locations.

In FY2012, a mid-term improvement plan was drafted to improve CO₂ emissions at factories abroad, setting an 8% reduction (as compared to 2011 levels) as the goal for 2015. Komatsu is working towards achieving this goal.

Improvements made domestically in Japan will be applied abroad to achieve this goal.

CO₂ Emissions of Global Shipment and Base Measurement Units



Reducing Transport Distance by Utilizing Near Ports

■Abroad: England's KUK Plant

Parts imported from Japan for component assembly (CKD) were unloaded at Southampton Port then transported by rail to the KUK Plant. By changing the unloading port to South Shields the land transport distance was reduced by 94%.

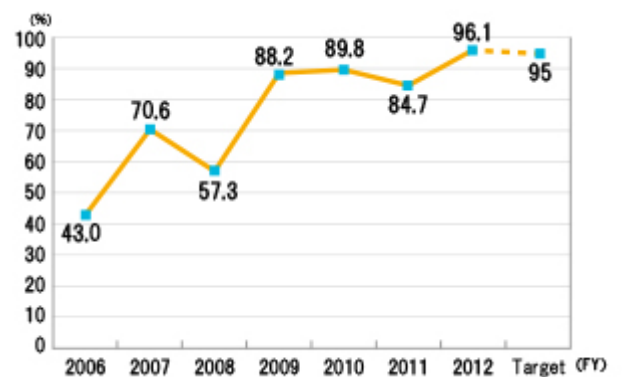
The effect on CO₂ reduction was 177 t- CO₂/year.



●● KUK and Land Transport Distance


■Domestic: Ibaraki Plant

The usage rate of Hitachinaka Port, closest to the Ibaraki Plant, surpassed the mid-term goal of 95% for an 11.6% increase to the previous year at 96.1%. The change in usage from unloading at Yokohama for transport by truck (160km) to unloading at Hitachinaka Port and transporting 4km resulted in CO₂ reduction by 65 t- CO₂/year and the land transport distance was reduced by 98%.



●● Hitachinaka Port Usage Rate

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Third party verification  CSR Themes **1**



Mitigating Climate Change


CO₂ Reduction of Suppliers

In order to encourage our suppliers to pursue CO₂ emissions reductions, we are expanding Komatsu's energy-saving activities to our major outsourcing suppliers in an effort to reduce power usage by 50%.

In June 2012 we kicked-off these activities, starting with the training of their management and facilities personnel.

We will continue to promote these activities in FY2013, in hopes of visualizing improvements and horizontal expansion in each company.

Enhancing Quality of Life

Third party verification  CSR Themes **1**



Mitigating Climate Change


Reducing CO₂ Emissions in Non-manufacturing Divisions

With the revision of the Act on the Rational Use of Energy, all Komatsu business units are assessing CO₂ emissions in an effort to achieve reductions. The energy consumption of non-manufacturing divisions, including the Head Office building and the Research Division is shown in the table below.

Energy Consumption of Non-manufacturing Divisions (FY2012)

	Komatsu		Main partner companies (99 companies)	Main sales and after-sales service divisions		
	Manufacturing (for reference)	Non-manufacturing		Sales of construction equipment	Rental	Lift
CO ₂ (1000t)	136.9	7.1	400.5	4.5	2.2	2.8
Crude-oil equivalent (1000kl)	75.4	3.8	195.8	2.6	1.3	1.7

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Topics

KOMATSU CASTEX Awarded the “Toyama Prefecture Environmental Conference Chairman Award”

Komatsu Castex Ltd, which is in the casting business, emits about 30% of the CO₂ generated by the Komatsu Group. In an effort to reduce its environmental impact, the plant has been switching to energy-saving equipment and facilities, increasing efficiency in production. In addition, the plant introduced the latest high-frequency melting furnace, and has been working to reduce emissions of greenhouse gases such as CO₂. In December 2012, these efforts were recognized as remarkable achievements over several years in implementing countermeasures against global warming, and the plant was awarded the "Toyama Prefecture Environmental Conference Chairman Award."




Toyama Prefecture Environmental Conference Chairman Award

«Related Articles»

«Global Environmental Policy»

[Relationship between Business Activities and the Environment](#)

Enhancing Quality of Life

Third party verification  CSR Themes **1**



Promoting Recycling

Promoting the Reman Remanufacturing Business

In our Reman business, the Komatsu Group remanufactures used engines, transmissions, and other key components (parts) of construction and mining equipment into "remanned" components that have the same high quality as newly manufactured components. We then put these components back on the market. The Group is promoting the Reman business at eleven Reman Centers around the world.

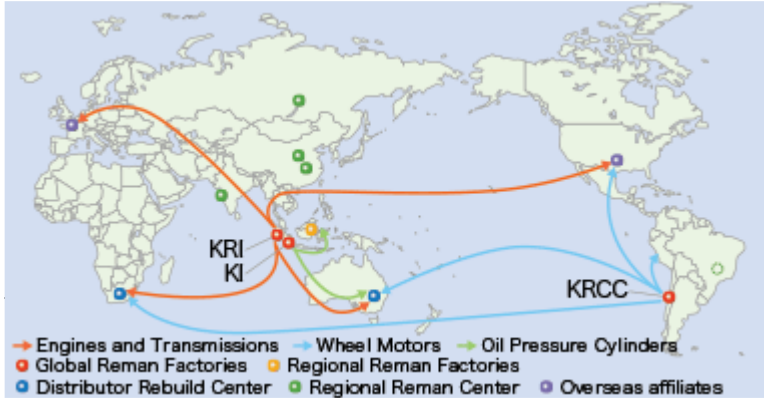
Promoting the Reman Business to the World

Reman, an abbreviation for remanufacturing, offers the following advantages to customers:

- Quality and performance that is the same as new components
- Lower cost for "remanned" components
- Reduced idle time for construction equipment because of adequate inventory of remanned components
- Resource conservation and waste reduction through reuse and recycling of components.

As the global center, Komatsu established PT Komatsu Reman Indonesia (KRI), which supplies parts, such as engines and transmissions for large-size construction machinery, and PT Komatsu Indonesia (KI), which supplies oil-pressure cylinders. Komatsu also established another global center, Komatsu Reman Center Chile (KRCC), which provides components for electric dump trucks.

Additionally, Komatsu established PT KOMATSU REMANUFACTURING ASIA (KRA) in Indonesia to recycle components of large-size construction machinery. For countries that are not part of our global supply chains, such as China, Russia, and India, we have established individual Reman Centers. For example, in January 2013, we established the eleventh Reman Center in Brazil.



●● Reman Factories and Centers map



●● The Brazil (KDB) Reman Center established in January 2013

Providing Reman-related Information

The Komatsu Group has set up "Reman-Net" as a network for Komatsu Reman Centers around the world. The Group is actively using this network to develop Reman operations for reuse and recycling of components at the global level.

IC tags and two-dimensional bar codes are used to manage each item's remanufacturing history, and to track quality and durability information. This important information is reported to the Group, to help develop components with optimal service life.

Future Steps

To further increase the reuse rate of used components the Komatsu Group is reducing the number of disposed parts by:

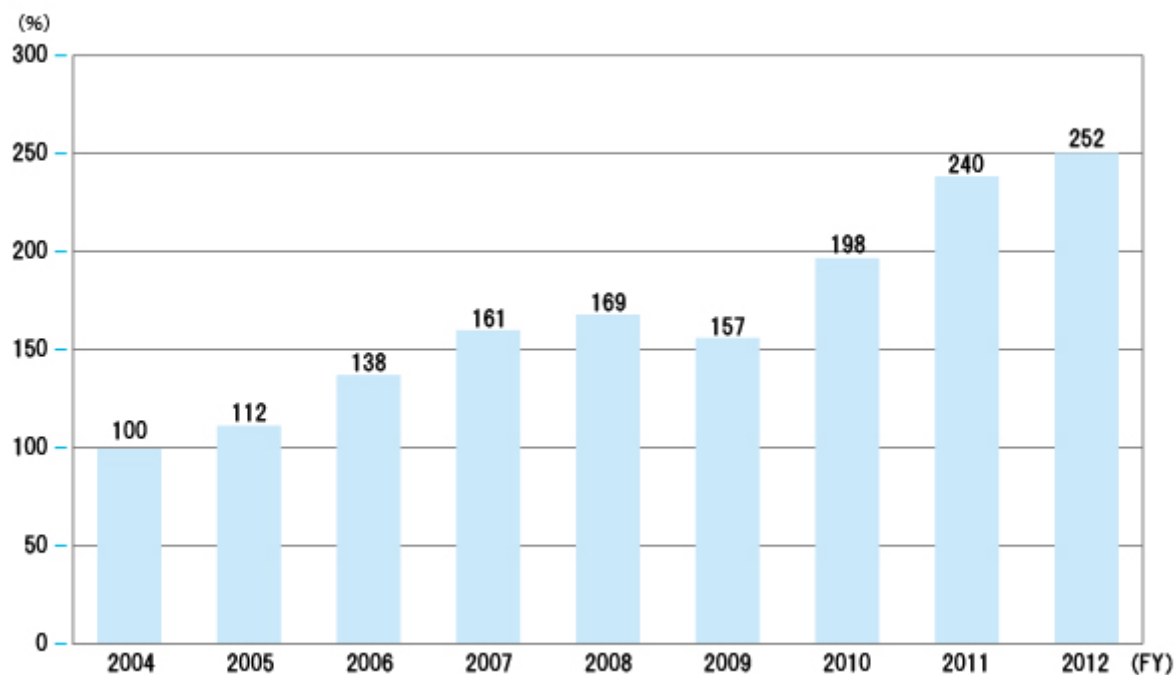
- Developing parts for remanufacturing, oversized parts, etc
- Developing recycling-related technologies (assessment and measurement for reuse, manufacturing worn-out parts, high-pressure cleaning, heat treatment, etc.)

to reduce waste components, and thereby further increase reuse and recycling activities.


Reman Process



Changes in Reman Ratios (base 2004 = 100)



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Promoting Recycling

Effective Utilization of Resources in Manufacturing Operations (Waste)

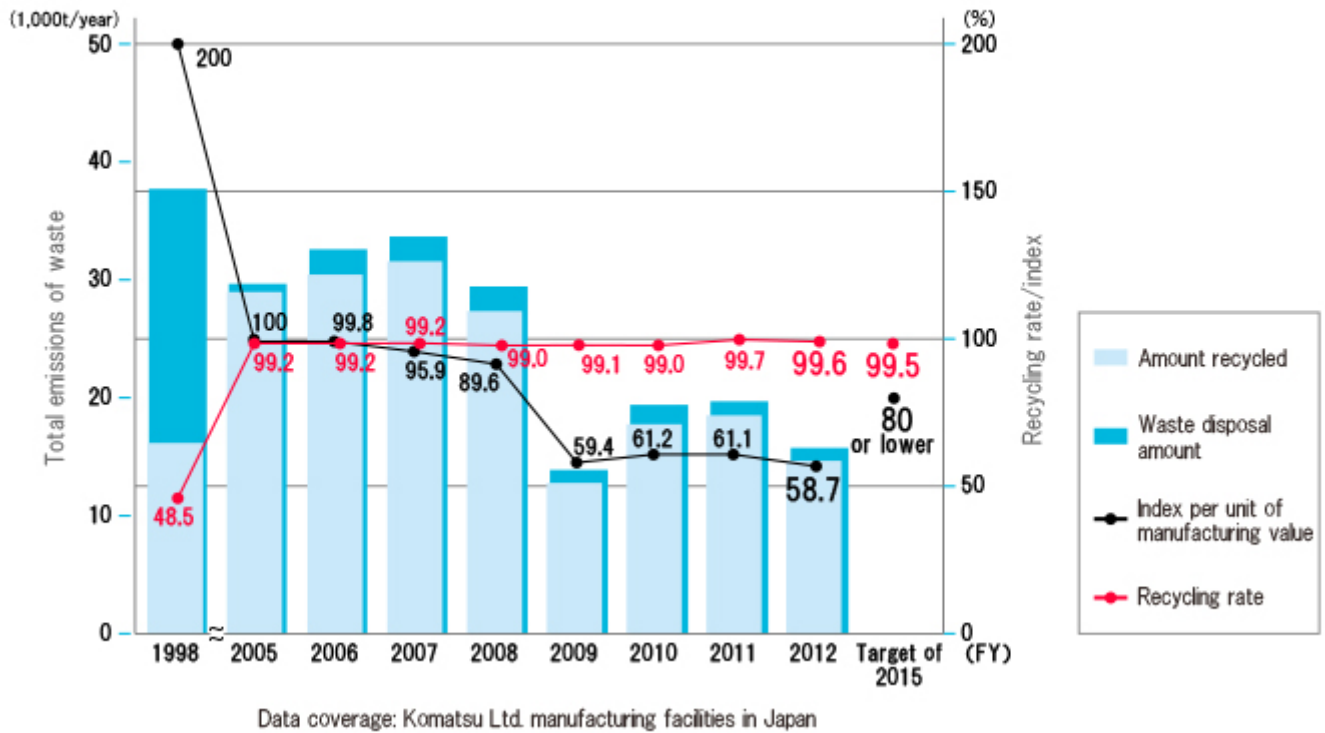
In tandem with reducing the amount of waste produced during manufacturing operations, Komatsu engages in "zero emissions" activities to use waste materials as resources. Starting in FY2011, Komatsu set new medium-term goals for our recycling rate and for the amount of waste generated per unit, and we are working toward those goals. In an effort to attain zero emissions, Komatsu raised the target recycling rate which was 99.5% or greater by FY2015. Our recycling rate reached 99.6% in FY2012, achieving the mid-term goal earlier than planned for the second year in a row.




■ ■ Strong Waste Liquid Disposal Equipment

Komatsu had projected cuts in the amount of waste materials generated per unit of manufacturing value in FY2015 of 20% or greater, compared to the FY2005 level. As a result of strict adherence to separated-waste collection and increased conversion of waste materials to resources, the amount of waste materials generated per unit has been trimmed by 41.3%, compared to the FY2005 level. In particular, the Oyama Plant implemented strong liquid waste disposal equipment, in an effort to greatly reduce liquid waste, and halved its generated waste in comparison to the previous year. Komatsu aims to continue its effective separated waste collection policy to achieve its medium-term goals.

Amount of Waste Generated



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Third party verification  CSR Themes **1**



Promoting Recycling

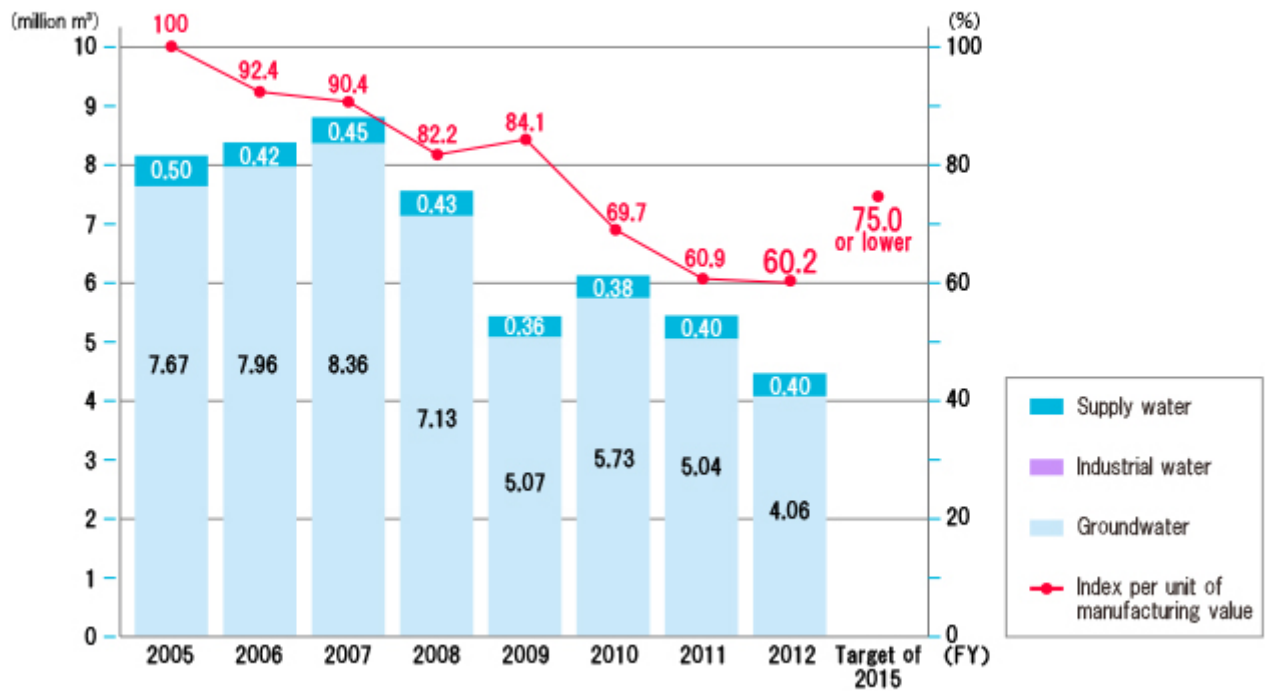
Effective Utilization of Resources in Manufacturing Operations (Water Resources)

In FY2011, Komatsu set a new medium-term target of achieving a 25% or greater reduction in the amount of water used per unit of manufacturing by FY2015, compared to the FY2005 level. The water-conservation campaign concentrates on manufacturing facilities with extensive groundwater usage located in the Hokuriku District. The Company has achieved reductions in the amount of water used per unit of manufacturing by 39.8% compared to the FY2005 level, through the reuse of water during processing and the elimination of wasteful day-to-day practices.

In particular, the Awazu Plant significantly reduced its groundwater consumption through measures such as adjusting the pump discharge, reevaluating the temperature of cooling water used for heat treatment, and the installation of water-circulation equipment. As a result, the Awazu Plant was able to reduce water usage by more than 70% per unit of manufacturing value.


Komatsu will continue efforts to save water resources to achieve its medium-term goals.

Amount of Water Resources Used



Data coverage: Komatsu Ltd. and the Komatsu Group manufacturing facilities in Japan

Enhancing Quality of Life

Third party verification  CSR Themes **1**



Environmental Risk Management

Promoting Legal Compliance, and Pollution Mitigation and Prevention

Komatsu Group companies periodically report and archive environmental measurement results, in accordance with applicable laws and regulations of national and local authorities. Komatsu had no violations relating to the environment, and no major accidents that could result in pollution, in FY2012.

Addressing Soil and Groundwater Contamination

Komatsu has established guidelines for testing soil and groundwater at our Japan facilities, and we perform investigations according to applicable laws and regulations at business units that are to be sold, closed, or demolished. If contamination is found, the Company takes appropriate measures under the supervision of local authorities. We are performing voluntary investigations at currently operating business units to check for contamination from volatile organic compounds (VOC) from cleaning solvents that were used in the past.

Komatsu has been surveying soil and groundwater for VOC contamination at Group business units in Japan since 2005. Business unit sites at which contamination has been detected have implemented countermeasures. The Company has selected methods to clean up the sites as quickly as possible.

Work at the Oyama Plant was completed in FY2009.

In FY2012, change in land character notifications were filed at the Kanazawa, Oyama and Koriyama Plants, in accordance with the provision of Article 4, Amended Soil Contamination Countermeasures Act. No survey order was issued from administrative authorities in relation to these sites because there was no concern regarding possible contamination.

In addition, at the Osaka Plant, a report for Article 12 was submitted for land specified by Article 14 as an area requiring change in land character notifications, and the change in land character was undertaken.

Status of Soil and Groundwater Cleanup in Japan

Business unit	Cleanup method	Cleanup status
Awazu Plant	Excavation and removal, soil vapor extraction, groundwater withdrawal and aeration, bioremediation	In process
Komatsu Plant	Excavation and removal, groundwater	In process

(formerly)	withdrawal and aeration, bioremediation	
Osaka Plant	Soil vapor extraction, air sparging, groundwater withdrawal and aeration, bioremediation	In process
Shonan Plant	Excavation and removal, groundwater withdrawal and aeration	In process
Tochigi Plant	Excavation and removal, bioremediation	In process

*Bio-remediation is purification process of hazardous materials through utilizing micro organisms and returning the soil to a non-hazardous state.

-Surveys revealed no contamination for the Koriyama Plant, Research Division in Hiratsuka, Techno Center in Izu and Field Testing Department in Oita.

Managing PCB (Polychlorinated Biphenyl) Waste

Komatsu stores and manages PCB-containing waste, such as transformers, in accordance with Japan's "Law Concerning Special Measures Against PCB Waste" and the "Waste Disposal and Public Cleansing Law." In FY2008, Komatsu entrusted PCB disposal to the Japan Environmental Safety Corporation (JESCO). A total of 234 PCB-containing capacitors were disposed of by FY2011.

In FY2012, JESCO disposed of an additional 101 capacitors. Additionally, Komatsu conducted a second review into the status of PCB-containing stabilizers, including those for fluorescent lamps, used in the Komatsu Group in Japan. As a result, about 3,900 condensers, including some in use, were found to contain PCB.

Continuing through 2013, we plan to carry out further disposal work to locate low-concentration PCB waste as well.

Number of PCB-containing Transformers and Capacitors in Storage

Company	Site	Number of disposal in FY2012	Number of storage	
			High density	Low density
Komatsu Ltd.	Head office	0	0	7
	Awazu Plant	9	58	112
	Osaka Plant	0	0	31
	Oyama Plant	60	253	41
	Shonan Plant	0	2	1
	Tochigi Plant	0	5	11
	Field Testing Department	0	0	3
	Construction & Mining Equipment Marketing Division	0	0	3
Subtotal of Komatsu		69	318	238
Komatsu Castex Ltd.		0	0	20
Komatsu NTC Ltd.		29	2	0

Komatsu Cabtec Co., Ltd.	0	2	12
Komatsu House Ltd.	0	1	4
Komatsu Construction Equipment Sales and Service Japan Ltd.	3	17	15
Komatsu Rental Ltd.	0	0	1
Total of Komatsu group	32	22	52
Total	101	340	261

-The share from the former Komatsu Plant was transferred to the Awazu Plant. The share from the former Mooka Plant was transferred to the Oyama Plant.

-The share from the former Kawagoe Plant is included in the Head office total.

Management of Chemical Substances and Pollution Prevention

VOCs such as xylene and ethylbenzene, which are used in paint coating, account for most of Komatsu's emissions of PRTR-regulated* substances. Though reductions in emissions in FY2012 were mostly due to reductions in production, the emission output level was improved as well. We plan to further reduce VOC emissions through approaches such as, (1) shifting to high solid paint, and (2) improving paint application rate.

*PRTR: Law designed to mandate the disclosure of the amount of specific chemical substances released into the environment to promote the management of such substances (The notification system based on the PRTR Law)

(handling 1 ton or more, or 0.5 ton or more for Class I Specified Chemical Substances) (applicable PRTR substances from April 2010)

[illegible]

87	Chromium and chromium (III) compounds	162.1	0.0	-	-	-	-	1.7	-	160.4
300	Toluene	120.8	93.9	-	-	-	-	18.5	6.1	2.4
438	Methylphthalene	102.2	4.3	-	-	-	-	-	91.6	6.2
453	Molybdenum and its compounds	45.1	0.0	-	-	-	-	0.0	-	45.1
448	Methylenbis (4,1 phenylene) = diisocyanate	32.2	0.0	-	-	-	-	0.0	31.9	0.2
296	1,2,4-trimethylbenzene	31.8	9.2	-	-	-	-	1.0	20.9	0.8
308	Nickel	21.5	0.0	-	-	-	-	0.4	-	21.2
88	Chromium (VI) compounds *1 *2	11.8	0.0	-	-	-	-	2.9	-	0.0
321	Vanadium compounds	9.0	-	-	-	-	-	-	-	9.0
277	Triethylamine	9.0	1.8	-	-	-	-	0.0	7.1	-
297	1,3,5-trimethylbenzene	8.2	4.0	-	-	-	-	0.5	3.7	-
132	Cobalt and its compounds	8.1	-	-	-	-	-	1.1	-	7.0
392	n-hexane	5.8	3.4	-	-	-	-	0.0	1.5	0.9
188	N,N-dicyclohexylamine	5.0	0.3	0.0	-	-	-	4.2	0.2	0.1
349	Phenol *3	4.4	0.4	-	-	-	-	-	4.0	-
258	1,3,5,7-tetraazatricyclo[3,3,1,1(3,7)]decane *3	4.2	-	-	-	-	-	-	4.1	0.1
405	Boron compound	3.3	-	-	-	-	-	2.1	1.2	0.1

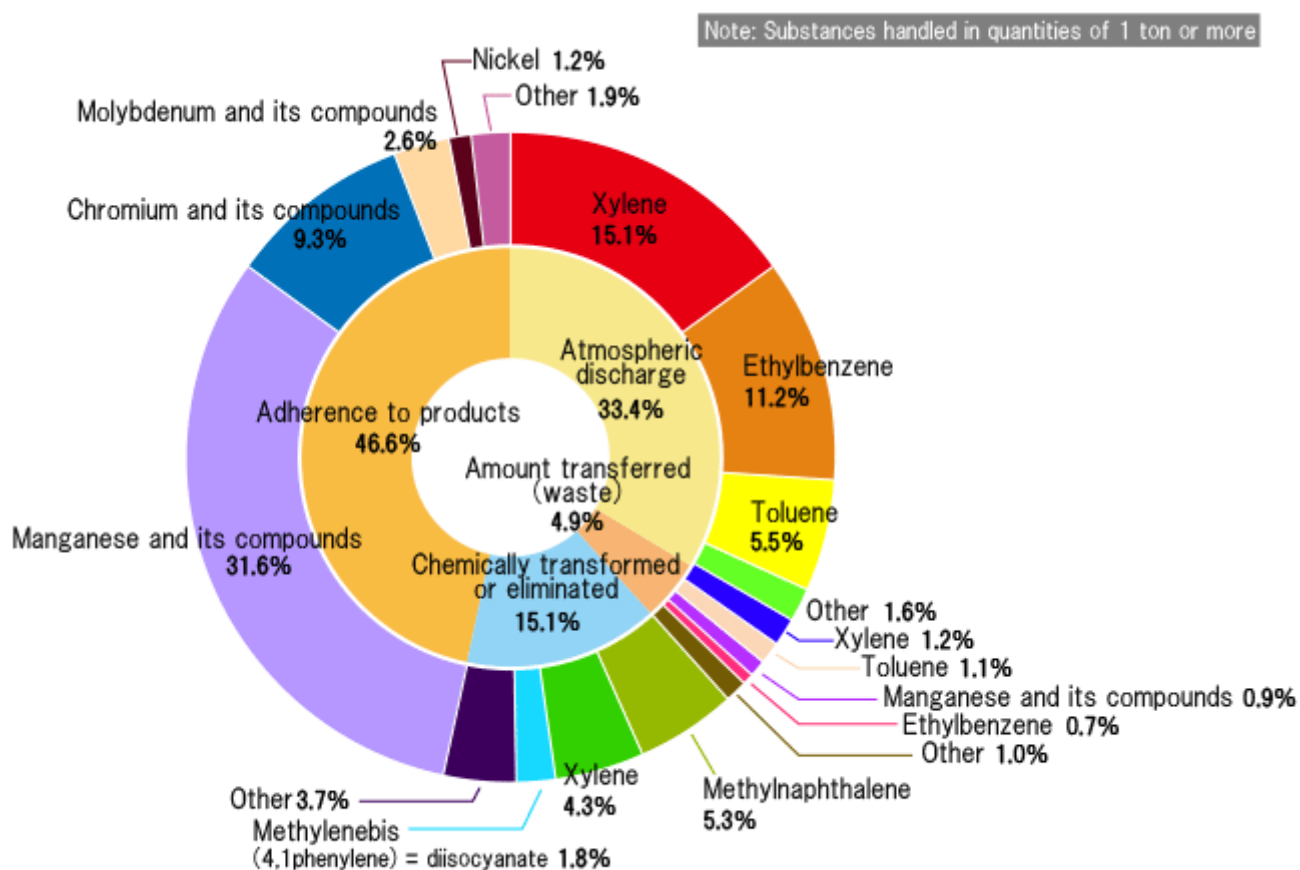
	ds									
207	2,6-Di-tert-butyl-4-methylphenol	3.0	1.0	0.0	-	-	-	0.4	0.0	1.5
302	Naphthalene	2.8	1.3	-	-	-	0.0	0.3	1.1	-
71	Ferric chloride	2.4	-	-	-	-	-	2.4	-	-
1	Zinc compounds (water-soluble)	1.0	-	-	-	-	-	0.0	-	1.0

*1: During chrome plating, chromium (VI) compounds become chromium compounds. Therefore, the amount transferred and the amount contained in products are entered as chromium and chromium(III) compounds.

*2: PRTR Class I Specified Chemical Substances

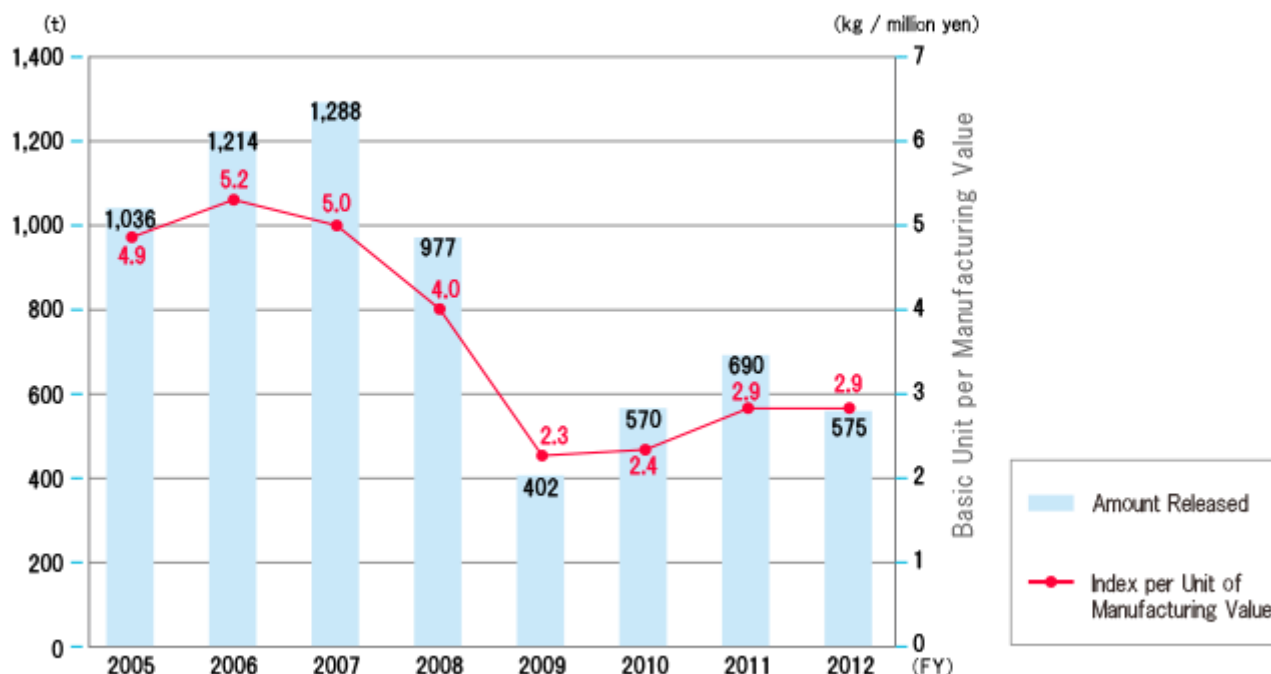
*3: Although the amount contained is below the amount that requires registration with the PRTR, we report the data because the amount released exceeds one ton.

Breakdown of the Amount of PRTR-related Substances Released and Transferred at Komatsu Group Manufacturing Facilities in Japan

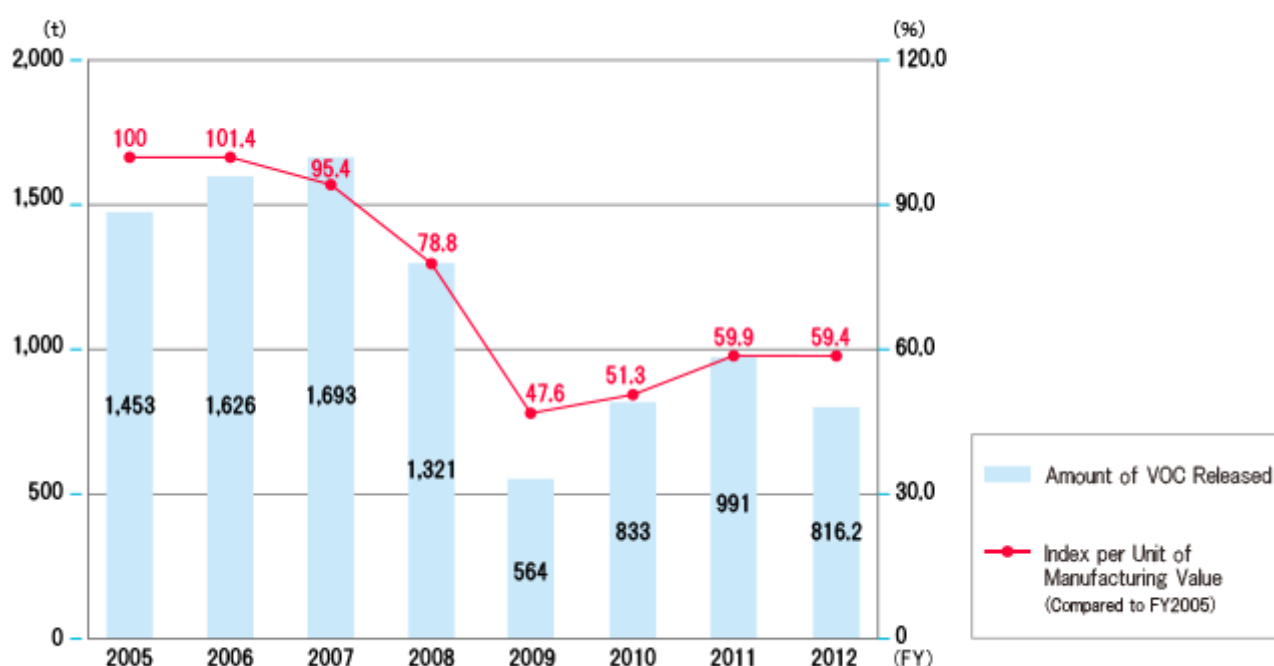


Changes in the Amounts of PRTR-related Substances Released* at Group Manufacturing Facilities in Japan



Note: Substances handled in quantities of 1 ton or more



Amount of VOC Released by Group Manufacturing Facilities in Japan



Enhancing Quality of Life

Third party verification  CSR Themes 



Environmental Risk Management

Reducing the Use of Substances of Environmental Concern and Complying with the EU REACH Regulation

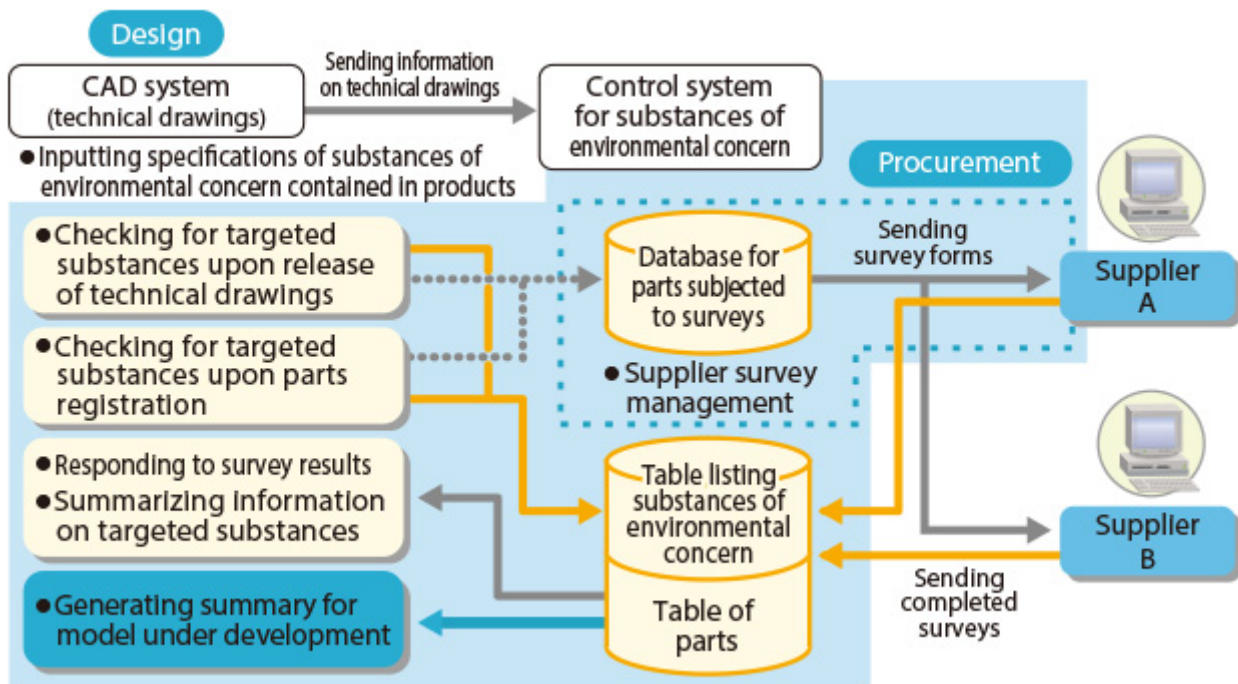
Komatsu has been making efforts from an early stage to reduce the use of asbestos, lead, and other substances of environmental concern. In FY1999, Komatsu created its own list of banned substances and substances approved for use only in limited circumstances(Refer to "[Substances of Environmental Concern Banned or to Be Reduced for Use in Products](#)"), which was based in part on the chemical substances banned under Japan's Law Concerning the Examination and Regulation of Manufacture of Chemical Substances Control, as well as regulations in other countries.

In addition, Komatsu has begun comprehensive control of substances of environmental concern. Recently, in compliance with REACH*1, Komatsu began revising its listing of substances designated as approved for limited use, "to be reduced," and "banned." Through the cooperation of suppliers, the Company has initiated a system to strengthen control of substances of environmental concern in its products. This system has been deployed in Japan and Europe, and is also being implemented in other overseas subsidiaries.

By using this system, we identify SVHC (substances of very high concern) in vehicles currently in production and in newly developed vehicles. Furthermore, we also regularly check for new SVHCs to be added to the list.

There are currently 138 SVHCs registered, but more are added on a bi-yearly basis. In future, it is said that the number of SVHC will increase up to 1,500. Komatsu has devised a workflow to monitor control of these substances.

Control System for Substances of Environmental Concern



Substances of Environmental Concern Banned or to Be Reduced for Use in Products

Rank	Number	Chemical Substance
Banned	13	<ul style="list-style-type: none"> ·Hexavalent Chromium ·Cadmium ·PBB/PBDE ·Tri-substituted Organostannic Compounds ·PCB ·Asbestos ·Specified CFCs/Alternative CFCs (HCFC) ·Trichloroethylene ·Triethanolamine ·Hexachlorobenzene ·PFOS (Perfluorooctanesulfates)
To be reduced (Subject to limited use)	15	<ul style="list-style-type: none"> ·Lead ·Mercury*3 ·Arsenic ·Selenium ·Alternative CFCs (HFC) ·Specified phthalate ester (DEHP/DBP/BBP/DIBP) *2,*3 ·Specified Brominated Flame Retardents (HBCDD)*3/ Specified Chlorinated Flame Retardents (TLEP) ·Polycyclic Aromatic Hydrocarbons (PAH) ·RCF (Fire-Resistant Ceramic Fibers) (Alumina and Scilica Types) ·Methanol ·DZ
Substances of Very High Concern		

(SVHC) under the EU REACH Regulation	(138)*4	<ul style="list-style-type: none"> ·DEHP/DBP/BBP/DIBP ·HBCDD/Trisphosphates (2-Chloroethyl) ·RCF ·Specified Lead Compounds (SOC 4)
--	---------	--


*1: REACH: EU regulations for Registration, Evaluation, Authorization and Restriction of Chemicals

*2: Diethylhexyl phthalate, dibutyl phthalate, benzyl butyl phthalate, diisobutyl phthalate

*3: Under review for stricter limits due to regulatory trends.

*4: The number of substances registered up until December, 2012 (progressively updated). Includes materials that are not contained in Komatsu construction equipment.

Enhancing Quality of Life

Third party verification  CSR Themes **1**



Biodiversity

Initiatives that Deal with Biodiversity

Komatsu will maintain our commitment to protecting biodiversity in our business activities, recognizing the impact of those activities on the ecosystem.

With the establishment of Komatsu's "Declaration of Biodiversity" and "Biodiversity Guideline" in January 2011, Komatsu business units worldwide began activities designed to preserve biodiversity.

Komatsu promotes initiatives to preserve biodiversity on two levels.

First, the Company continues to promote ongoing efforts to reduce the environmental impact of Komatsu's business activities. Komatsu also considers biodiversity when deciding how land is to be used, such as when building factories.

Second, Komatsu is becoming directly involved in the preservation of biodiversity, and at the same time expanding our "one-site, one-theme activities" to raise employee's awareness of the need to preserve local ecosystems.

Declaration of Biodiversity by Komatsu (Excerpt/Summary)

Komatsu recognizes that its business activities are dependent on and influence benefits from the ecosystem through its biodiversity.

Based on this understanding, Komatsu strives to take actions in accordance with the policies described below, as it shares a sense of responsibility regarding the biodiversity crisis, and strives to conserve diverse resources.

I (Recognition by Management)

Komatsu recognizes that conservation and promulgation of biodiversity are important management

tasks.

II (Initiatives)

Komatsu shall promote biodiversity through the following two perspectives

1.Komatsu shall reduce its environmental impact, which is affecting biodiversity, through its business activities.

- (1)Reduction of environmental impact of products
- (2)Reduction of direct environmental impact from products throughout lifecycle.
- (3)Consideration of biodiversity when using land.

2.Komatsu shall work for conservation and promulgation of biodiversity through its social contribution activities.

III(Operation)

Komatsu shall promote activities by means of a step-by-step approach.

IV(Cooperation with the community)

In order to protect the biodiversity rooted in regions, Komatsu will undertake activities in coalition with administrative agency, local citizens, NGOs and other entities; by doing so we aim become a corporation communities can be proud of.

V(Full participation activities)

Komatsu will promulgate the importance of biodiversity to all employees and undertake activities with their full participation. We will involve corporations related to the lifecycle of Komatsu products and representative agencies as well as customers in these activities and promote our initiatives on a global group-wide scale.

VI(Communication)

Communication: Komatsu will strive to educate and disclose related information to employees. In addition, Komatsu will actively disclose information on activities being undertaken and work to contribute in heightening the level of societal awareness on the importance of biodiversity.

Evaluation of Activities concerning Biodiversity

■Utilization of the "Land Use Score Card"

Komatsu utilizes the "Land Use Score Card" and the "Living Things Monitoring Sheet" formulated by Japan Business initiative for Biodiversity (JBIB), a general incorporated association.

The "Land Use Score Card" scores the effort level of a business site in its biodiversity activities out of a

maximum of 100 points in 3 categories consisting of 17 items.

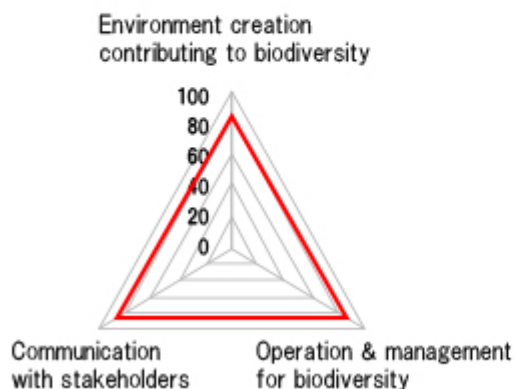
Komatsu conducted this evaluation at 15 of our bases in Japan, including the head office. Of those, the 2 top scoring bases are presented below.

We will continue to promote activities in order to strive to achieve higher scores in this evaluation.

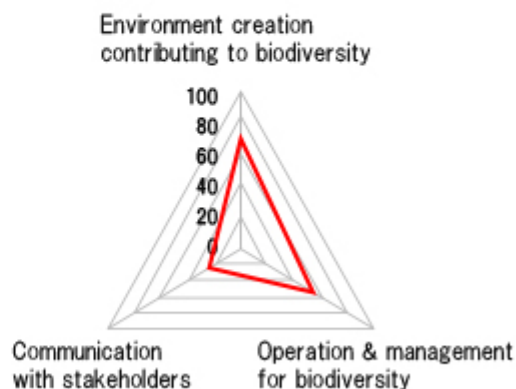
Environment Creation	Area contributed to biodiversity	Amount of steric greenery	Thickness and properties of topsoil	Harmony with the surrounding environment
	Solidarity of green land	Flora rooted within the region	High-quality roof greening	Care for habitat of fauna
Sustainment	Proper management of chemical use	Care for water reduction	Care for substance reduction	
	Monitoring of specified organisms	Measures against foreign species		
Communication	Cooperation between experts and the community	Training of caretakers within the company	Promotion of a variety of applicable programs	Participation of employees

●● Items and Scoring of the Land Use Score Card®

Notsu Test Site (89 point)



KOMATSU Green Park(63 point)

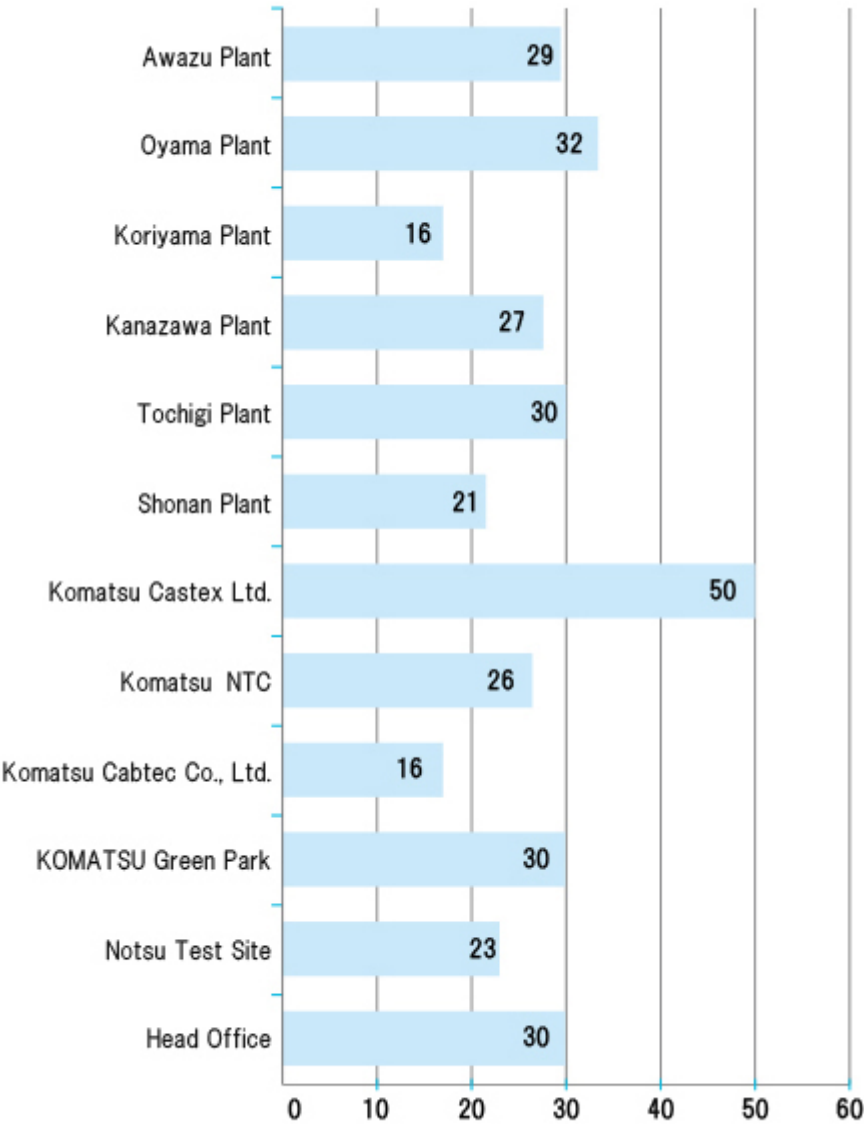


■Study Conducted with the Living Things Monitoring Sheet

The Living Things Monitoring Sheet allows employees to monitor organisms even if they are not experts through the identification of silhouette, and is a collection of species that act as an indicator of the environment. As shown below, the silhouettes are divided into 66 species in all.

The results of the studies conducted at the 15 Komatsu sites throughout Japan are shown below. Depending on the site, studies were conducted 4 times throughout each season at business facilities.

Moving forward, these studies will be periodically conducted each year.



Class	Number of Species
Fowl	17
Odonata	5
Branchiura	8
Hymenoptera	4
Cicadidae	1
Coeoptera	7
Achidioidea	1
Aquatic Insects	4
Arachnids	2
Pulmonata	2
Bombina	3
Plants	4
Fungi	3
Edaphone	5

■Oyama Plant: Biotope Construction

At the Oyama Plant, 10,000 tons of flood-control space and green pond were preserved on the plant's premises. In the future, we plan to construct a biotope and natural wood area in this area.

In some areas, work such as pruning and thinning the brush has already started. Colonies of herons and several rare plant species have been observed in this area. We plan to maintain the area, to further promote conservation activities.



●● Biotope



●● Heron Colony

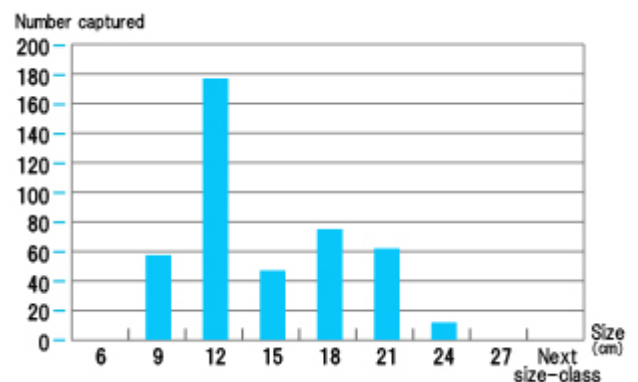
■Komatsu Castex: Study on Ponds

Komatsu Castex is surrounded by ponds that have never been observed by anyone, and so these ponds were studied for the inhabitant organisms.

Among other species, the common carp, crucian carp, Chinese pond turtle, mitten crab, and killifish were identified. In particular, the number of crucian carp was a great surprise; there were 432 of them living in the pond.



●● Lake that was studied



●● Size of captured crucian carp

■Komatsu NTC: Biotope Creation

Komatsu NTC has voluntarily taken up the responsibility of operating and managing a city's public park close to its facilities. The employees now utilize the public park as a site for their biodiversity conservation activities.



●● The public park operated and managed by Komatsu NTC

■Koriyama Plant: Biotope Creation

The Koriyama Plant created a biotope on vacant land next to the general office.

Efforts in improvement and conservation activities will continue throughout the future to create an even better habitat for organisms.



●● Biotope completed last year


Awazu Plant Awarded for Efforts in the Kibagata Recovery Project

The Kibagata Environment Forum was held in February 17, 2013, where KOMATSU's Awazu Plant was awarded by the Kibagata Environmental Improvement Pro-Resolution Union (group consisting of local neighborhood organizations, NPOs, corporate businesses and other entities) for contribution to the Kibagata Recovery Project.



●● Awards ceremony at the Kibagata Environment Forum

Data

Third party verification 

Environmental Education

The basic framework for education in the Komatsu group divides functions in a way where education of common knowledge is supervised by the Head Office and specific education, unique or distinct to occupation, is administered by respective divisions.

The environmental education for FY2012 followed a curriculum that was in essence the same as that of the previous year. We continued emphasizing education on environmental laws in FY2012, which has been our focus since FY2010. In addition, in FY2012, we rigorously engaged in programs targeting employees to raise awareness over the importance of conserving biodiversity. In regards to increasing licensed personnel relating to the environment, we plan to promote the acquisition of their qualification.

Courses in Environmental Education and Training in Japan

(excluding general environmental courses)

Organizer	No.	Course name	Target	Participants			
				FY2009	FY2010	FY2011	FY2012
	1	Advanced environmental education (held every two years)	Environmental specialists (Komatsu and affiliates)	16	-	16	-
	2	Overview of the ISO14000 series	Managers (Komatsu, affiliates, and business associates)	55	83	74	72
	3	Training of internal auditors / Refresher courses	Environmental auditors (Komatsu, affiliates, and business	40	273	103	380

Head Office			associates)				
	4	Development and manufacturing (introductory)	Development and manufacturing staff (for second-year employees)	182	112	266	248
	5	Environmental training for manufacturing engineers	Assistant foremen/ foremen/ manufacturing engineers/ students of Komatsu Institute of Technology	91	114	158	160
	6	Training new employees	New Employees (Komatsu and affiliates)	115	200	229	354
	7	Lectures on the environment, experience-oriented education	Komatsu Group employees	398	1,002	1,300	1,316
	8	Education to refresh environmental understanding, (e-Learning)	Komatsu Group managers and employees	237	194	251	153
	9	Education for biodiversity	Komatsu Group employees	-	-	889	252
Divisions overseeing environmental management at plants	1	Education in the basics of auditing	Managers and employees	98	99	183	221
	2	Overview of the ISO14000 series	Managers and employees	836	468	409	183
	3	Training of internal auditors	Environmental auditors	7	26	27	38
	4	Training new employees	New Employees	1,116	1,240	1,020	940
	5	Regulatory education and personnel exchange	Employees (and other participants)	517	448	1,232	1,066
	6	Specialist training	Environmental conservation practitioners (persons involved in regulatory affairs, etc.)	2,466	952	2,165	2,561


In addition to the education and training courses listed above, Komatsu also held courses dealing with environmental issues intended for sales agents.

Number of Persons Having Environment-related Certificate

Certificate name	Number of persons with certificate*			
	FY2009	FY2010	FY2011	FY2012
Pollution control administrators	177(39)	178(33)	241(33)	230(33)
Energy administrators	48(13)	42(10)	45(10)	45(10)
Environmental management system auditors	7	6	6	4

Figures in parentheses indicate the number of officers required.

Data

Third party verification 

Environmental Accounting

We have published the environmental accounting to get the objective evaluation of the environmental conservation activities.

Environmental Costs (Investments and expenses)

Komatsu and Komatsu Group manufacturing facilities in Japan (including the Research Division)

Category	Investment			Expenses		
	FY2011	FY2012		FY2011	FY2012	
	Investment *1 (millions of yen)	Investment *1 (millions of yen)	Contents	Expenses *1 (millions of yen)	Expenses *1 (millions of yen)	Contents
1 Business area cost	795	3,201		3,624	3,696	
(1). Pollution prevention cost	400	1,107	- Investment for installation and conversion of pollution mitigation/prevention facilities (installation of particle collectors, effluent processing facilities, etc.)	1,189	1,095	- Cost of maintaining equipment for mitigation/prevention of air and water pollution and for noise and vibration prevention (labor and depreciation costs)
(2). Global environmental conservation	375	1,505	- Investment for implementing energy conservation measures (conversion of lighting to LED,	1,401	1,322	- Cost of maintaining energy conservation facilities, such as cogeneration systems

cost			installation of solar power generators, and such)			(labor and depreciation costs)
(3). Resource circulation cost	20	589	- Investment for reducing the volume of waste materials (conversion of recycling facilities, introduction of equipment for separating waste, etc.)	1,034	1,279	- Waste material processing cost
2 Upstream/ downstream cost	0	0		234	201	- Reduction of the environmental impact of components, etc. shipped outside Japan - Reduction of the environmental impact of mass-production units
3 Administration cost	450	76	- Investment for beautifying manufacturing sites	885	861	- Cost of maintaining environmental management systems - Cost of creating green spaces and beautifying manufacturing sites
4 R&D cost	202	457	- Investment in research facilities for reduction of environmental impact	14,330	18,989	- Cost of R&D activities to reduce the environmental impact of products - Cost of R&D activities to develop environmentally-friendly construction equipment
5 Social activity cost	15	0		21	10	
6 Environmental remediation cost	0	0		531	464	- Cost of conducting surveys and remedial countermeasures related to soil and groundwater contamination - PCB disposal costs

Total	1,462	3,734	19,625	24,221
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*1 All figures are rounded off to the nearest million yen.

Environmental Effects

Komatsu and Komatsu Group manufacturing facilities in Japan (including the Research Division)

Environmental impact reduction effects		
Items of environmental impact	Reduction amount (t/year)	Rate of year-on-year changes (%)
CO ₂ emissions	-55,182	-20.6
Water consumption	-976,567	-17.9
Waste materials generation	-3,929	-19.7

Komatsu and Komatsu Group manufacturing facilities in Japan (including the Research Division)

Economic benefits				
Tangible benefits			Avoidance benefits of environmental risks*2	Contribution to profits*2
Type	Monetary value*1 (millions of yen)	Major activities		
Energy conservation	1,079	- Energy conversion, etc.	- *There were no accidents or pollution in Japan during FY2012 that led to violations of the law. - *No litigation costs were required in Japan during FY2012.	- Proceeds from mobile recycling equipment - Proceeds from value added due to reduced environmental impact of products (engines)
Resource conservation	3			
Waste materials reduction	710	- Promotion of recycling through thoroughgoing sorting		
Gain on sale of valuables	422	- Reuse of furnace slag for roadbed materials		
Other	15			
Total	2,229			

*1:Figures are rounded off to the nearest million yen.

*2:Komatsu used statements instead of numeral figures to describe the "Avoidance benefits of environmental risks" and the "Contribution to profits." The company will further develop concepts and ways to understand effects in these categories. The sales amounts of businesses for content presented in "Contributions to profits" in FY2012 are as follows:

- Mobile recycling equipment business: 3.1 billion yen
- Engine business: 142.7 billion yen
(Total for intra-Group sales from the Engine Business Division)

Effects on Society *1

Environmental impact reduction effects	Tangible benefits
<ul style="list-style-type: none">- Environmental impact reduction resulting from on-site recycling methods- Environmental impact reduction resulting from product operation- Waste components reduction resulting from “Reman” business	<ul style="list-style-type: none">- Reduction of expenses for processing waste materials- Savings in operating and maintenance costs- Reduction of repair costs

*1 Concerning the effects on society derived from product use by customers, the major items of qualitative information are shown here as a reference.



Independent Practitioner's Review on Environmental Report 2013

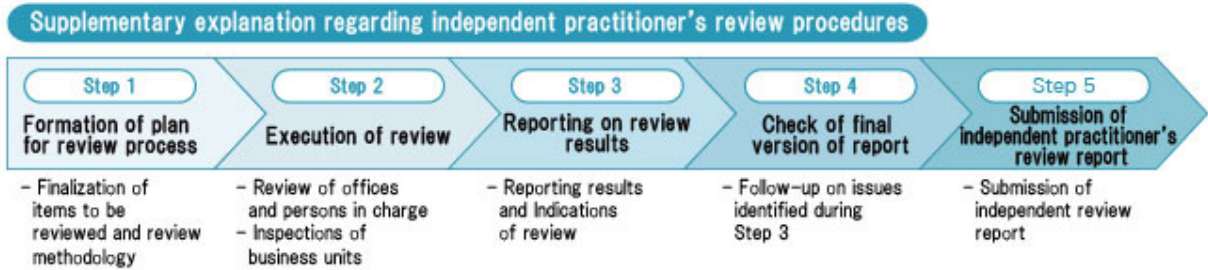
Regarding the Independent Practitioner's Review

Komatsu views the independent practitioner's review process as crucial for ensuring the integrity and objectivity of its Environmental Report. For that reason, Komatsu has received an independent practitioner's review from Deloitte Tohmatsu Evaluation and Certification Organization Co., Ltd., a member of the Deloitte Touche Tohmatsu Group. The results are as represented below with regard to the information appearing in the Environmental Report 2013.

[Deloitte Tohmatsu Evaluation and Certification Organization Co., Ltd.](#)

(TRANSLATION)	<u>Independent Practitioner's Review Report</u>	July 12, 2013
Mr. Tetsuji Ohashi President and Chief Executive Officer, Komatsu Ltd.		Hiroshi Iwanaga Chief Executive Officer Deloitte Tohmatsu Evaluation and Certification Organization Co., Ltd.
1. Scope of the Review	We have reviewed the "CSR & Environmental Report 2013" (the "Report") prepared by Komatsu Ltd. (the "Company") in order to post it on the Company's website. The purpose of our review was to provide limited assurance from an independent practitioner about whether the material quantitative environmental information for the period from April 1, 2012 to March 31, 2013, included in marked pages (✓) of the Report (hereinafter referred to as the "Material Quantitative Environmental Information"), was accurately measured and calculated, with reference to the Environmental Reporting Guidelines (2012 version) (issued by the Ministry of the Environment, Government of Japan), the Global Reporting Initiative ("GRI") Sustainability Reporting Guidelines (G3.1), and Basic Guidelines on Accounting for Greenhouse Gas Emissions Throughout the Supply Chain (version 2.0) (issued by the Ministry of the Environment and Ministry of Economy, Trade and Industry, Government of Japan) in accordance with calculation methods adopted by the Company.	
2. Responsibility of the Management and Responsibility of the Independent Practitioner	The Report is the responsibility of the Company's management. Our responsibility is to provide our limited assurance with respect to our review performed on the Report as an independent practitioner.	
3. Summary of Review	To obtain an adequate and valid basis for providing limited assurance with respect to our conclusions, we performed our review in accordance with the International Standard on Assurance Engagements 3000 (issued by the International Federation of Accountants in December 2003) and the Proposed Environmental Report Review Standard (issued by the Japanese Ministry of the Environment in March 2006). The review procedures performed for the Material Quantitative Environmental Information for the period from April 1, 2012 to March 31, 2013, included in the Report consisted of: 1) agreeing information to summary tables and supporting documents on a sample basis; 2) interviewing the responsible Company's personnel and the persons in charge; 3) reviewing and agreeing information to the relevant Company's minutes, the Company's regulations, and ISO-related documents; 4) site visits; and 5) comparing information with other available supporting internal and external materials of the Company.	
4. Conclusions	On the basis of the review procedures described in the preceding paragraph, nothing has come to our attention that caused us to believe that the Material Quantitative Environmental Information for the period from April 1, 2012 to March 31, 2013, included in the Report was not accurately measured or calculated, with reference to the Environmental Reporting Guidelines (2012 version) (issued by the Ministry of the Environment, Government of Japan), the GRI Sustainability Reporting Guidelines (G3.1), and Basic Guidelines on Accounting for Greenhouse Gas Emissions Throughout the Supply Chain (version 2.0) (issued by the Ministry of the Environment and Ministry of Economy, Trade and Industry, Government of Japan) in accordance with calculation methods adopted by the Company.	

Supplementary Explanation regarding the Conducting of Independent Practitioner's Review Procedures



Supplementary explanation regarding site visits to business units

1. Business units visited in this review:

 - Komatsu Ltd. Head Office
 - Osaka Plant
2. Visits to business units take place in a planned rotation. Records for business units not visited during this review were reviewed at the Komatsu Ltd. Head Office.




Executing a review at the Head Office




Executing a review at the Osaka Plant

The corresponding section of the Independent Practitioner's Review

Komatsu has received an independent practitioner's review from Deloitte Tohmatsu Evaluation and Certification Organization Co., Ltd. and gives the check mark  to the corresponding section in this web site.

Data

Third party verification 



Scope of Environmental Data, etc

Komatsu Group Manufacturing Facilities in Japan

Komatsu (parent company) manufacturing facilities, specifically the following eight plants

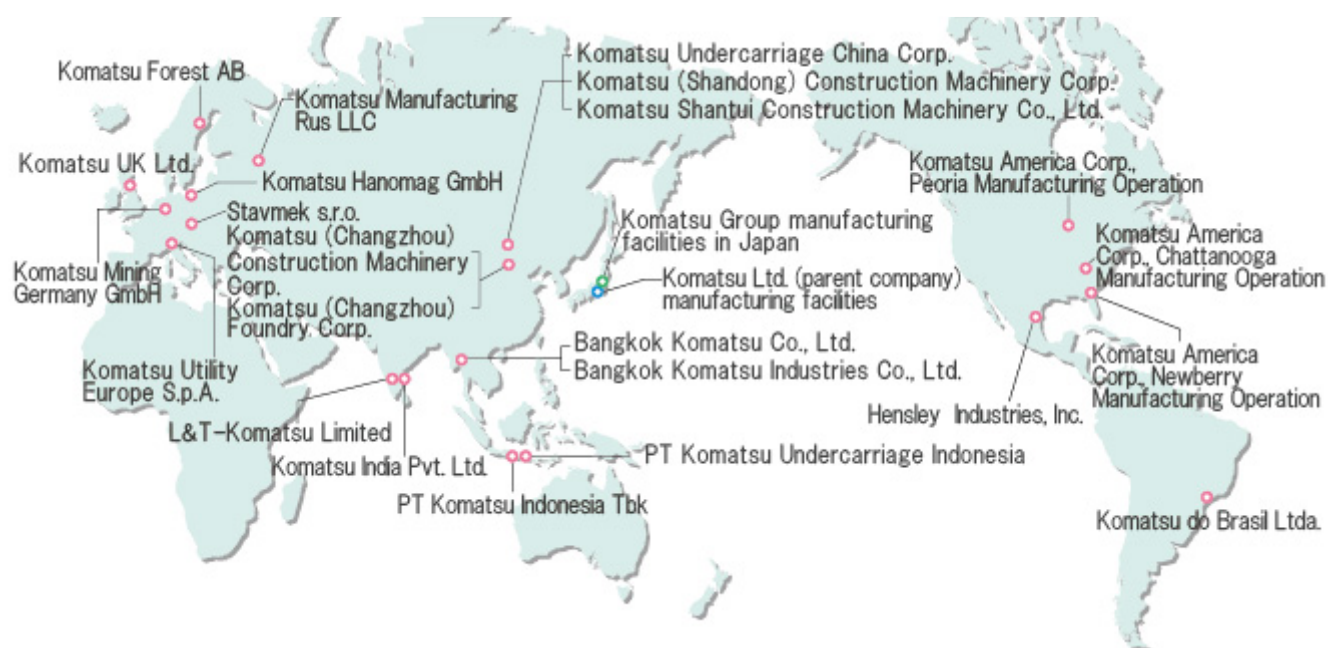
The Awazu Plant [including the Komatsu NTC Ltd (KM Division).], the Kanazawa Plant [including the Kanazawa-Daiichi Plant, the Kanazawa-Daini Plant and the Kawakita Plant], the Osaka Plant [including the Rokko Plant], the Ibaraki Plant and the Oyama Plant [including Komatsu Cummins Engine Co., Ltd., Industrial Power Alliance Ltd. and GIGAPHOTON, Inc.], the Koriyama Plant, and the Shonan Plant [including KELK Ltd.], the Tochigi Plant.

Komatsu Group manufacturing facilities in Japan, specifically the above eight plants and the following four business units

Komatsu Castex Ltd., Komatsu Cabtec Co., Ltd., Komatsu NTC Ltd. [including Toyama Kiko Corporation, and D.S.K. Co., Ltd.] and Komatsu House Ltd.

Komatsu Group Manufacturing Facilities Outside Japan

Komatsu Group manufacturing facilities outside Japan, specifically the 23 business units appearing on the world map below.



Komatsu Group manufacturing facilities including outside Japan: All of the 35 above-mentioned offices are shown.


Guidelines Used As Reference

- "Environmental Report Guidelines 2012" (Ministry of the Environment of Japan)
- "The Sustainability Reporting Guidelines G 3.1" (Global Reporting Initiative [GRI])
- Basic Guidelines on Accounting for Greenhouse Gas Emissions Throughout the Supply Chain Ver 2.0 (Ministry of the Environment and Ministry of the Economy, Trade and Industry of Japan)
- Policy on Emissions Unit Values for Accounting of Greenhouse Gas Emissions, etc., by Organizations Throughout the Supply Chain Ver 2.0 (Ministry of the Environment and Ministry of the Economy, Trade and Industry of Japan)

Period Covered

This report principally covers data for the period from April 2012 to the end of March 2013, with some information from after April 2013.

Data

Third party verification 


Site Data (Outside Japan)

The Americas

Manufacturing facilities			CMO	PMO	NMO
			Komatsu America Corp.		
			Chattanooga Manufacturing Operation	Peoria Manufacturing Operation	Newberry Manufacturing Operation
Overview	Location		Tennessee, U.S.A.	Illinois, U.S.A.	South Carolina, U.S.A.
	Main products		Hydraulic excavators, motor graders	Large wheel loaders, large dump trucks	Utility equipment (small construction equipment)
	Number of employees	-	420	884	151
Energy consumption	Electricity	MWh	8,209	18,984	3,201
	Heavy oil, light oil, et al.	kl	-	168	-
	Natural gas	thousand m ³	1,166	2,613	7
	LPG, et al.	t	-	50 (LPG)	488 (LPG)
	Total energy consumption	GJ	126,025	297,219	60,552
	CO ₂	t-CO ₂	6,917	16,432	3,559
Water consumption		t	14,086	53,098	480
Total emissions of waste		t	1,673	3,084	291
Date of ISO14001 certification acquisition			April 1998	March 2002	March 2004

Manufacturing facilities			KDB	Hensley
			Komatsu do Brasil Ltda.	Hensley Industries, Inc.
Overview	Location		São Paulo, Brazil	Texas, U.S.A.
	Main products		Hydraulic excavators, bulldozers	Buckets, teeth and edges
	Number of employees	-	1,040	510
Energy consumption	Electricity	MWh	27,842	42,625
	Heavy oil, light oil, et al.	kl	425	121
	Natural gas	thousand m ³	-	4
	LPG, et al.	t	335 (LPG)	87 (LPG)
	Total energy consumption	GJ	310,745	434,143
	CO ₂	t-CO ₂	4,462	24,888
Water consumption		t	27,954	47,618
Total emissions of waste		t	14,832	33,523
Date of ISO14001 certification acquisition			January 2002	November 2009

1. All data, except the number of employees, were derived from performances of all manufacturing facilities during FY2012. The number of employees was based on the companies' data as of March 31, 2013.
2. Conversion to CO₂ and total energy consumption were based on statistical data of each region, country, and that of IEA for 2012.
3. Total emissions of waste are expressed as a composite of the amount recycled and the amount disposed.

Data

Third party verification 

Site Data (Outside Japan)

Europe

Manufacturing facilities			KUK	KOHAG	KMG
			Komatsu UK Ltd.	Komatsu Hanomag GmbH	Komatsu Mining Germany GmbH
Overview	Location		Birtley, United Kingdom.	Hannover, Germany	Düsseldorf, Germany
	Main products		Hydraulic excavators	Wheel loaders, compactors	Ultra-large hydraulic excavators
	Number of employees	-	335	448	935
Energy consumption	Electricity	MWh	5,478	4,756	7,231
	Heavy oil, light oil, et al	kl	233	-	83
	Natural gas	thousand m ³	712	939	1,296
	LPG, et al	t	-	2,478* (District heating)	10 (LPG)
	Total energy consumption	GJ	89,057	84,641	122,327
	CO ₂	t-CO ₂	4,704	5,410	5,545
Water consumption		t	17,673	7,774	11,980
Total emissions of waste		t	1,038	813	6,446
Date of ISO14001 certification acquisition			December, 1998	September, 2000	July, 2002

*Unit: MWh

Manufacturing facilities			KUE	KFAB
			Komatsu Utility Europe S.p.A.	Komatsu Forest AB
Overview	Location		Este (PD), Italy	Ume Sweden
	Main products		Utility equipment (small construction equipment)	Forestry equipment

	Number of employees	-	360	391
Energy consumption	Electricity	MWh	2,802	2,565
	Heavy oil, light oil, et al.	kl	-	-
	Natural gas	thousand m ³	516	-
	LPG, et al.	t	-	1,987* (District heating)
	Total energy consumption	GJ	47,750	28,633
	CO ₂	t-CO ₂	2,261	212
Water consumption		t	8,542	4,979
Total emissions of waste		t	808	295
Date of ISO14001 certification acquisition			November, 2001	October, 2003


* Unit: MWh

Manufacturing facilities			KMR	STAVMEK
			Komatsu Manufacturing Rus LLC	Stavmek s.r.o.
Overview	Location		Yaroslavl, Russia	Czech Republic
	Main products		Hydraulic excavators, Forklift trucks	Manufacture of sheet metal parts for construction equipment
	Number of employees	-	228	159
Energy consumption	Electricity	MWh	2,965	3,023
	Heavy oil, light oil, et al.	kl	35	-
	Natural gas	thousand m ³	1,137	373
	LPG, et al.	t	-	-
	Total energy consumption	GJ	77,358	43,418
	CO ₂	t-CO ₂	3,324	2,330
Water consumption		t	9,419	16,915
Total emissions of waste		t	779	226
Date of ISO14001 certification acquisition			-	April 2012

1. All data, except the number of employees, were derived from performances of all manufacturing facilities during FY2012. The number of employees was based on the companies' data as of March 31, 2013.

2. Conversion to CO₂ and total energy consumption were based on statistical data of each region, country, and that of IEA for 2012.
3. Total emissions of waste are expressed as a composite of the amount recycled and the amount disposed.

Data

Third party verification 

Site Data (Outside Japan)

Asia

Manufacturing facilities			KI	KUI	BKC
			PT Komatsu Indonesia Tbk	PT Komatsu Undercarriage Indonesia	Bangkok Komatsu Co., Ltd.
Overview	Location		Jakarta, Indonesia	West Java, Indonesia	Chonburi, Thailand
	Main products		Hydraulic excavators, bulldozers, wheel loaders	Components for construction equipment, crawler type for construction machinery, pins	Hydraulic excavators
	Number of employees	-	1,661	951	594
Energy consumption	Electricity	MWh	32,262	37,915	7,120
	Heavy oil, light oil, et al.	kl	1,277	967	663
	Natural gas	thousand m ³	4,180	-	-
	LPG, et al.	t	182 (LPG)	256 (LPG)	31 (LPG)
	Total energy consumption	GJ	550,418	428,506	98,159
	CO ₂	t-CO ₂	35,623	30,527	5,657
Water consumption		t	142,681	79,000	50,709
Total emissions of waste		t	5,402	4,773	998
Date of ISO14001 certification acquisition			June 2000	October 2008	September 2001

Manufacturing facilities			BKI	LTK	KIPL
			Bangkok Komatsu Industries Co., Ltd.	L&T-Komatsu Limited	Komatsu India Pvt.
Overview	Location		Chonburi, Thailand	Bangalore, India	Chennai, India
	Main products		Forklift trucks, Castiron parts for construction machinery	Hydraulic excavators	Dump trucks
	Number of employees	-	350	840	231
Energy consumption	Electricity	MWh	25,734	6,595	488
	Heavy oil, light oil, et al.	kl	35	79	127
	Natural gas	thousand m ³	-	-	-
	LPG, et al.	t	262 (LPG)	89 (LPG)	-
	Total energy consumption	GJ	271,115	73,279	9,781
	CO ₂	t-CO ₂	14,651	6,564	787
Water consumption		t	52,646	64,324	23,009
Total emissions of waste		t	6,374	1,223	159
Date of ISO14001 certification acquisition			December 2009	June 1999	January 2010

Manufacturing facilities			KSC	KCCM	KCF
			Komatsu Shantui Construction Machinery Co., Ltd.	Komatsu (Changzhou) Construction Machinery Corp.	Komatsu (Changzhou) Foundry Corp.
Overview	Location		Shandong, China	Jiangsu, China	Jiangsu, China
	Main products		Hydraulic excavators	Wheel loaders, hydraulic excavators, motor graders	Iron castings and foundry molds for construction and casting parts
	Number of employees	-	991	598	291
	Electricity	MWh	6,896	7,515	23,005
	Heavy oil, light oil, et al.	kl	85	560	51

Energy consumption	Natural gas	thousand m ³	86	-	-
	LPG, et al.	t	15,445 (Steam)	80 (LPG, LNG)	160 (Coal, LPG, LNG)
	Total energy consumption	GJ	140,170	100,734	239,050
	CO ₂	t-CO ₂	7,374	7,598	18,660
Water consumption		t	112,085	45,640	87,875
Total emissions of waste		t	734	1,277	6,774
Date of ISO14001 certification acquisition			December, 2000	September, 2000	December, 1999

Manufacturing facilities			KSD	KUCC
			Komatsu (Shandong) Construction Machinery Corp.	Komatsu Undercarriage China Corp.
Overview	Location		Shandong, China	Shandong, China
	Main products		Mini construction equipment, forklift trucks, hydraulic equipment and casting parts	Crawler type for construction machinery
	Number of employees	-	683	608
Energy consumption	Electricity	MWh	27,147	22,195
	Heavy oil, light oil, et al.	kl	445	65
	Natural gas	thousand m ³	1,253	937
	LPG, et al.	t	9,247 (LPG, Steam)	-
	Total energy consumption	GJ	378,385	262,128
	CO ₂	t-CO ₂	26,097	19,580
Water consumption		t	154,081	66,997
Total emissions of waste		t	2,596	3,587
Date of ISO14001 certification acquisition			December, 2008*	December, 2011


* Acquisite the certification only
Body Division

1. All data, except the number of employees, were derived from performances of all manufacturing facilities during FY2012. The number of employees was based on the companies' data as of March 31, 2013.
2. Conversion to CO₂ and total energy consumption were based on statistical data of each region, country, and that of IEA

for 2012.

3. Total emissions of waste are expressed as a composite of the amount recycled and the amount disposed.

Data

Third party verification 



Site Data (Japan)

Awazu Plant

Overview

Year of Establishment	1921
Location	Komatsu, Ishikawa Prefecture
Main Products	Small and medium-sized bulldozers, small hydraulic excavators, small and medium-sized wheel loaders, motor graders, armored vehicles, etc.
Site/Green Landscape (1,000 m ²)	700/90
Number of employees	3,179
Date of ISO14001 certification acquisition	September 1997

* The number of employees includes those working for Komatsu affiliates on the premises.

* The number of employees as of the end of March 2013.

Major Performance

Environmental impact		Energy consumption		
Item	Actual value	Item	Actual consumption	Converted to calorie equivalents (GJ)
Total CO ₂	34,519 t-CO ₂	Electricity	58,244 MWh	566,196

emissions				
NOx total amount	13,920 kg	Heavy oil A	2,684 kl	104,928
SOx total amount	3,661 kg	Kerosene	10 kl	353
Total emissions of waste	1,741 t	Light oil	291 kl	11,110
Amount recycled	1,740 t	Town gas	0 Nkm ³	
Recycling rate	100 %	LPG	1,333 t	66,919
BOD emissions	2,132 kg	Other		1,427
COD emissions	2,207 kg	Total		750,933
Wastewater	739,394 m ³			

* Refer to the Data on Environmental Impact Resulting from Business Activities for details on the methods used to calculate amounts.

* Total emissions of waste are expressed as a composite of the amount recycled (excluding valuables) and the amount disposed.

* Recycling rate is calculated by dividing the amount recycled (including valuables) by the amount generated (including valuables).

* Total emissions of BOD and COD are calculated by multiplying the average concentration by the amount of wastewater.

* The heat energy conversion factor is calculated in keeping with Greenhouse Gas Emission Calculation - Reporting Manual, which is based on the act on Promotion of Global Warming Countermeasures.

Compliance Conditions to Major Regulations

Air				
Item	Unit	Facility	Regulated value	Actual value
Nitrogen oxides (NOx)	ppm	Boiler	180	85
	ppm	Diesel engine	950	700
Sulfur oxides (SOx)	-	K-value regulation	17.5	3.03

Soot and dust	g/m ³ N	Boiler	0.3	0.015
	g/m ³ N	Diesel engine	0.1	0.015

* Regulated values are in accordance with the Air Pollution Control Law and local regulations.

Wastewater					
Item	Regulated value according to the Water Pollution Control Law	Regulated value	Actual value		
			Maximum	Minimum	Average
pH	5.8-8.6	5.8-8.6	7.2	6.4	6.7
BOD (Biochemical oxygen demand)	160 mg/l	80	3.2	ND	2.0
COD (Chemical Oxygen Demand)	160 mg/l	80	5.7	0.6	2.4
Suspended solids (SS)	200 mg/l	120	2.8	ND	1.3
Mineral oils	5 mg/l	5	ND	ND	ND
Copper	3 mg/l	3	ND	ND	ND
Zinc	2 mg/l	2	0.16	ND	0.08
Nitrogen	120 mg/l	120	4.5	3.7	4.2
Phosphorus	16 mg/l	16	0.36	0.04	0.19
Cadmium	0.1 mg/l	0.1	ND	ND	ND
Lead	0.1 mg/l	0.1	ND	ND	ND
Chromium (VI)	0.5 mg/l	0.5	ND	ND	ND
Trichloroethylene	0.3 mg/l	0.3	ND	ND	ND
Tetrachloroethylene	0.1 mg/l	0.1	ND	ND	ND

Dichloromethane	0.2 mg/l	0.2	ND	ND	ND
1,1,1-trichloroethane	3 mg/l	3	ND	ND	ND

* Regulated values are in accordance with the Water Pollution Control Law and local regulations.


* ND ("not detected") indicates a value below the lower limit of detection.

* ND is considered to be the lower limit of detection when calculating the average.

* Other items are confirmed to be below the regulated value.

* Data for the Awazu Plant include data for the Komatsu NTC Ltd (KM Division).

Data

Third party verification 



Site Data (Japan)

Kanazawa Plant

Overview

Year of Establishment	2007
Location	Kanazawa, Ishikawa Prefecture
Main Products	Ultra-large hydraulic excavators, large presses, medium presses
Site/Green Landscape (1,000 m ²)	134/29
Number of employees	777
Date of ISO14001 certification acquisition	May 2007

* The number of employees includes those working for Komatsu affiliates on the premises.

* The number of employees as of the end of March 2013.

Major Performance

Environmental impact		Energy consumption		
Item	Actual value	Item	Actual consumption	Converted to calorie equivalents (GJ)
Total CO ₂ emissions	2,975 t-CO ₂	Electricity	7,665 MWh	74,529

NOx total amount	- kg	Heavy oil A	0 kl	0
SOx total amount	0 kg	Kerosene	0 kl	0
Total emissions of waste	341 t	Light oil	2 kl	58
Amount recycled	341 t	Town gas	0 Nkm ³	0
Recycling rate	100 %	LPG	9 t	460
BOD emissions	137 kg	Other		0
COD emissions	852 kg	Total		75,046
Wastewater	69,174 m ³			

* Refer to the Data on Environmental Impact Resulting from Business Activities for details on the methods used to calculate amounts.

* Total emissions of waste are expressed as a composite of the amount recycled (excluding valuables) and the amount disposed.

* Recycling rate is calculated by dividing the amount recycled (including valuables) by the amount generated (including valuables).

* Total emissions of BOD and COD are calculated by multiplying the average concentration by the amount of wastewater.

* The heat energy conversion factor is calculated in keeping with Greenhouse Gas Emission Calculation - Reporting Manual, which is based on the act on Promotion of Global Warming Countermeasures.

Compliance Conditions to Major Regulations

Air				
Item	Unit	Facility	Regulated value	Actual value
Nitrogen oxides (NOx)		N/A	-	-
Sulfur oxides (SOx)	-			
Soot and dust		N/A	-	-


Regulated values are in accordance with the Air Pollution Control Law and local regulations.

Wastewater					
Item	Regulated value according to the Water Pollution Control Law	Regulated value	Actual value		
			Maximum	Minimum	Average
pH	5.8-8.6	5.0-9.0	7.8	6.7	7.2
BOD (Biochemical oxygen demand)	160 mg/l	80	2.0	ND	1.5
COD (Chemical Oxygen Demand)	160 mg/l	80	22.0	1.3	7.1
Suspended solids (SS)	200 mg/l	120	4.0	ND	2.4
Mineral oils	5 mg/l	5	ND	ND	ND
Copper	3 mg/l	3	ND	ND	ND
Zinc	2 mg/l	2	ND	ND	ND
Nitrogen	120 mg/l	120	31.0	ND	11.3
Phosphorus	16 mg/l	16	4.2	0.008	1.52
Cadmium	0.1 mg/l	0.1	ND	ND	ND
Lead	0.1 mg/l	0.1	ND	ND	ND
Chromium (VI)	0.5 mg/l	0.5	ND	ND	ND
Trichloroethylene	0.3 mg/l	0.3	ND	ND	ND
Tetrachloroethylene	0.1 mg/l	0.1	ND	ND	ND
Dichloromethane	0.2 mg/l	0.2	ND	ND	ND

1,1,1-trichloroethane	3 mg/l	3	ND	ND	ND
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- * Regulated values are in accordance with the Water Pollution Control Law and local regulations.
- * ND ("not detected") indicates a value below the lower limit of detection.
- * ND is considered to be the lower limit of detection when calculating the average.
- * Other items are confirmed to be below the regulated value.
- * Data for the Kanazawa Plant include data for the Kanazawa Dai-ichi, Dai-ni and the Kawakita Plant.

Data

Third party verification 

Site Data (Japan)

Osaka Plant

Overview

Year of Establishment	1952
Location	Hirakata, Osaka Prefecture
Main Products	Large bulldozers, medium-sized and large hydraulic excavators, mobile crushers / recyclers / tub grinders (crushers, soil stabilizers, tub grinders, etc.)
Site/Green Landscape (1,000 m ²)	591/88
Number of employees	2,856
Date of ISO14001 certification acquisition	July 1997

* The number of employees includes those working for Komatsu affiliates on the premises.

* The number of employees as of the the end of March 2013.

Major Performance

Environmental impact		Energy consumption		
Item	Actual value	Item	Actual consumption	Converted to calorie equivalents (GJ)

Total CO ₂ emissions	30,024 t-CO ₂	Electricity	52,169 MWh	506,830
NOx total amount	3,525 kg	Heavy oil A	159 kl	6,209
SOx total amount	238 kg	Kerosene	13 kl	462
Total emissions of waste	1,575 t	Light oil	302 kl	11,521
Amount recycled	1,570 t	Town gas	4,230 Nkm ³	177,216
Recycling rate	99.7 %	LPG	76 t	3,830
BOD emissions	328 kg	Other		1,342
COD emissions	727 kg	Total		707,411
Wastewater	156,574 m ³			

* Refer to the Data on Environmental Impact Resulting from Business Activities for details on the methods used to calculate amounts.

* Total emissions of waste are expressed as a composite of the amount recycled (excluding valuables) and the amount disposed.

* Recycling rate is calculated by dividing the amount recycled (including valuables) by the amount generated (including valuables).

* Total emissions of BOD and COD are calculated by multiplying the average concentration by the amount of wastewater.

* The heat energy conversion factor is calculated in keeping with Greenhouse Gas Emission Calculation - Reporting Manual, which is based on the act on Promotion of Global Warming Countermeasures.

Compliance Conditions to Major Regulations

Air				
Item	Unit	Facility	Regulated value	Actual value
Nitrogen oxides (NOx)	ppm	Boiler	150	38
	ppm	Metal furnace	180	46
	ppm	Paint drying furnace	230	3

	ppm	Gas engine	600	67
Sulfur oxides (SOx)	-	Regulation of total emissions (m ³ N/h)	1.573	
Soot and dust	g/m ³ N	Boiler	0.05	0.014
	g/m ³ N	Metal furnace	0.1	0.015
	g/m ³ N	Paint drying furnace	0.1	0.007

* Regulated values are in accordance with the Air Pollution Control Law and local regulations.

Wastewater					
Item	Regulated value according to the Water Pollution Control Law	Regulated value	Actual value		
			Maximum	Minimum	Average
pH	5.8-8.6	5.8-8.6	7.8	7.3	7.5
BOD (Biochemical oxygen demand)	160 mg/l	25	3.7	ND	2.1
COD (Chemical Oxygen Demand)	160 mg/l	25	6.7	3.1	4.6
Suspended solids (SS)	200 mg/l	90	5.0	ND	2.7
Mineral oils	5 mg/l	3	ND	ND	ND
Copper	3 mg/l	5	ND	ND	ND
Zinc	2 mg/l	2	ND	ND	ND
Nitrogen	120 mg/l	120	8.4	2.4	5.0
Phosphorus	16 mg/l	16	1.9	0.1	0.8

Cadmium	0.1 mg/l	0.01	ND	ND	ND
Lead	0.1 mg/l	0.05	ND	ND	ND
Chromium (VI)	0.5 mg/l	0.05	ND	ND	ND
Trichloroethylene	0.3 mg/l	0.03	ND	ND	ND
Tetrachloroethylene	0.1 mg/l	0.01	ND	ND	ND
Dichloromethane	0.2 mg/l	0.02	ND	ND	ND
1,1,1-trichloroethane	3 mg/l	1	ND	ND	ND

* Regulated values are in accordance with the Water Pollution Control Law and local regulations.


* ND ("not detected") indicates a value below the lower limit of detection.

* ND is considered to be the lower limit of detection when calculating the average.

* Other items are confirmed to be below the regulated value.

* Data for the Osaka Plant include data for the Rokko Plant.

Data

Third party verification 



Site Data (Japan)

Ibaraki Plant

Overview

Year of Establishment	2007
Location	Hitachinaka, Ibaraki Prefecture
Main Products	Large wheel loaders, dump trucks
Site/Green Landscape (1,000 m ²)	264/57
Number of employees	865
Date of ISO14001 certification acquisition	May 2007

* The number of employees includes those working for Komatsu affiliates on the premises.

* The number of employees as of the end of March 2013.

Major Performance

Environmental impact		Energy consumption		
Item	Actual value	Item	Actual consumption	Converted to calorie equivalents (GJ)
Total CO ₂ emissions	3,172 t-CO ₂	Electricity	7,188 MWh	70,275

NOx total amount	- kg	Heavy oil A	0 kl	0
SOx total amount	2 kg	Kerosene	6 kl	228
Total emissions of waste	307 t	Light oil	115 kl	4,393
Amount recycled	307 t	Town gas	0 Nkm ³	0
Recycling rate	100 %	LPG	32 t	1,583
BOD emissions	3,468 kg	Other		0
COD emissions	- kg	Total		76,479
Wastewater	22,327 m ³			

* Refer to the Data on Environmental Impact Resulting from Business Activities for details on the methods used to calculate amounts.

* Total emissions of waste are expressed as a composite of the amount recycled (excluding valuables) and the amount disposed.

* Recycling rate is calculated by dividing the amount recycled (including valuables) by the amount generated (including valuables).

* Total emissions of BOD and COD are calculated by multiplying the average concentration by the amount of wastewater.

* The heat energy conversion factor is calculated in keeping with Greenhouse Gas Emission Calculation - Reporting Manual, which is based on the act on Promotion of Global Warming Countermeasures.

Compliance Conditions to Major Regulations

Air				
Item	Unit	Facility	Regulated value	Actual value
Nitrogen oxides (NOx)		N/A	-	-
Sulfur oxides (SOx)	-			
Soot and dust		N/A	-	-

* Regulated values are in accordance with the Air Pollution Control Law and local regulations.

Wastewater					
Item	Regulated value according to the Water Pollution Control Law	Regulated value	Actual value		
			Maximum	Minimum	Average
pH	5.8-8.6	5-9	8.9	6.8	8.2
BOD (Biochemical oxygen demand)	160 mg/l	600	360	84.0	155
COD (Chemical Oxygen Demand)	160 mg/l	-	-	-	-
Suspended solids (SS)	200 mg/l	600	470	12.0	176
Mineral oils	5 mg/l	5	ND	ND	ND
Copper	3 mg/l	-	-	-	-
Zinc	2 mg/l	-	-	-	-
Nitrogen	120 mg/l	-	-	-	-
Phosphorus	16 mg/l	-	-	-	-
Cadmium	0.1 mg/l	-	-	-	-
Lead	0.1 mg/l	-	-	-	-
Chromium (VI)	0.5 mg/l	-	-	-	-
Trichloroethylene	0.3 mg/l	-	-	-	-
Tetrachloroethylene	0.1 mg/l	-	-	-	-
Dichloromethane	0.2 mg/l	-	-	-	-

1,1,1-trichloroethane	3 mg/l	-	-	-	-
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* Regulated values are in accordance with the Water Pollution Control Law and local regulations.

* ND ("not detected") indicates a value below the lower limit of detection.

* ND is considered to be the lower limit of detection when calculating the average.

* Other items are confirmed to be below the regulated value.

Data

Third party verification 



Site Data (Japan)

Oyama Plant

Overview

Year of Establishment	1962
Location	Oyama, Tochigi Prefecture
Main Products	Engines for construction/industrial machinery, diesel generators, hydraulic equipment, axle, excimer lasers, etc.
Site/Green Landscape (1,000 m ²)	570/118
Number of employees	3,327
Date of ISO14001 certification acquisition	May 1997

* The number of employees includes those working for Komatsu affiliates on the premises.

* The number of employees as of the end of March 2013.

Major Performance

Environmental impact		Energy consumption		
Item	Actual value	Item	Actual consumption	Converted to calorie equivalents (GJ)
Total CO ₂	51,250 t-CO ₂	Electricity	74,722 MWh	726,904

emissions				
NOx total amount	39,464 kg	Heavy oil A	166 kl	6,479
SOx total amount	208 kg	Kerosene	2,475 kl	90,821
Total emissions of waste	1,716 t	Light oil	3,429 kl	130,999
Amount recycled	1,713 t	Town gas	3,388 Nkm ³	141,952
Recycling rate	99.9 %	LPG	41 t	2,038
BOD emissions	4,271 kg	Other		1,484
COD emissions	6,973 kg	Total		1,100,679
Wastewater	568,800 m ³			

* Refer to the Data on Environmental Impact Resulting from Business Activities for details on the methods used to calculate amounts.

* Total emissions of waste are expressed as a composite of the amount recycled (excluding valuables) and the amount disposed.

* Recycling rate is calculated by dividing the amount recycled (including valuables) by the amount generated (including valuables).

* Total emissions of BOD and COD are calculated by multiplying the average concentration by the amount of wastewater.

* The heat energy conversion factor is calculated in keeping with Greenhouse Gas Emission Calculation - Reporting Manual, which is based on the act on Promotion of Global Warming Countermeasures.

Compliance Conditions to Major Regulations

Air				
Item	Unit	Facility	Regulated value	Actual value
Nitrogen oxides (NOx)	ppm	Diesel engine	950	777
	ppm	Gas turbine	70	14
Sulfur oxides (SOx)	-	K-value regulation	7.0	0.65

Soot and dust	g/m ³ N	Diesel engine	0.1	0.029

* Regulated values are in accordance with the Air Pollution Control Law and local regulations.

Wastewater					
Item	Regulated value according to the Water Pollution Control Law	Regulated value	Actual value		
			Maximum	Minimum	Average
pH	5.8-8.6	5.8-8.6	8.4	7.0	7.4
BOD (Biochemical oxygen demand)	160 mg/l	25	12.5	2.4	7.5
COD (Chemical Oxygen Demand)	160 mg/l	25	17.7	6.2	12.3
Suspended solids (SS)	200 mg/l	50	36.4	1.0	14.0
Mineral oils	5 mg/l	5	1.0	ND	0.6
Copper	3 mg/l	3	ND	ND	ND
Zinc	2 mg/l	2	0.09	ND	0.06
Nitrogen	120 mg/l	20	9.7	2.5	5.2
Phosphorus	16 mg/l	2	0.5	0.1	0.3
Cadmium	0.1 mg/l	0.1	ND	ND	ND
Lead	0.1 mg/l	0.1	ND	ND	ND
Chromium (VI)	0.5 mg/l	0.1	ND	ND	ND
Trichloroethylene	0.3 mg/l	0.3	ND	ND	ND
Tetrachloroethylene	0.1 mg/l	0.1	ND	ND	ND

Dichloromethane	0.2 mg/l	-	-	-	-
1,1,1-trichloroethane	3 mg/l	3	ND	ND	ND

* Regulated values are in accordance with the Water Pollution Control Law and local regulations.

* ND ("not detected") indicates a value below the lower limit of detection.

* ND is considered to be the lower limit of detection when calculating the average.

* Other items are confirmed to be below the regulated value.

* Data for the Oyama Plant include data for the Komatsu Cummins Engine Co., Ltd., the Industrial Power Alliance Ltd., and the GIGAPHOTON, Inc..

Data

Third party verification 



Site Data (Japan)
Koriyama Plant

Overview

Year of Establishment	1995
Location	Koriyama, Fukushima Prefecture
Main Products	Hydraulic cylinders, swivel joints, gear pumps
Site/Green Landscape (1,000 m ²)	297/93
Number of employees	442
Date of ISO14001 certification acquisition	July 2002

* The number of employees includes those working for Komatsu affiliates on the premises.
* The number of employees as of the end of March 2013.

Major Performance

Environmental impact		Energy consumption		
Item	Actual value	Item	Actual consumption	Converted to calorie equivalents (GJ)
Total CO ₂ emissions	8,918 t-CO ₂	Electricity	9,137 MWh	88,216

NOx total amount	46,838 kg	Heavy oil A	1,544 kl	60,370
SOx total amount	1,786 kg	Kerosene	0 kl	0
Total emissions of waste	1,002 t	Light oil	0 kl	0
Amount recycled	1,002 t	Town gas	0 Nkm ³	0
Recycling rate	100 %	LPG	408 t	20,498
BOD emissions	106 kg	Other		0
COD emissions	150 kg	Total		169,085
Wastewater	15,229 m ³			

* Refer to the Data on Environmental Impact Resulting from Business Activities for details on the methods used to calculate amounts.

* Total emissions of waste are expressed as a composite of the amount recycled (excluding valuables) and the amount disposed.

* Recycling rate is calculated by dividing the amount recycled (including valuables) by the amount generated (including valuables).

* Total emissions of BOD and COD are calculated by multiplying the average concentration by the amount of wastewater.

* The heat energy conversion factor is calculated in keeping with Greenhouse Gas Emission Calculation - Reporting Manual, which is based on the act on Promotion of Global Warming Countermeasures.

Compliance Conditions to Major Regulations

Air				
Item	Unit	Facility	Regulated value	Actual value
Nitrogen oxides (NOx)	ppm	Cogeneration engine	760	660
Sulfur oxides (SOx)	-	K-value regulation	11.5	0.67
Soot and dust	g/m ³ N	Baking (electric) furnace	0.2	Less than

				0.003
	g/m ³ N	Cogeneration engine	0.2	0.058

* Regulated values are in accordance with the Air Pollution Control Law and local regulations.

Wastewater					
Item	Regulated value according to the Water Pollution Control Law	Regulated value	Actual value		
			Maximum	Minimum	Average
pH	5.8-8.6	5.8-8.6	7.4	6.9	7.2
BOD (Biochemical oxygen demand)	160 mg/l	40	20	ND	7.0
COD (Chemical Oxygen Demand)	160 mg/l	40	14	5.1	9.8
Suspended solids (SS)	200 mg/l	70	6.6	2.6	4.1
Mineral oils	5 mg/l	5	ND	ND	ND
Copper	3 mg/l	3	ND	ND	-
Zinc	2 mg/l	2	0.06	0.06	-
Nitrogen	120 mg/l	120	12.0	12.0	-
Phosphorus	16 mg/l	16	2.5	2.5	-
Cadmium	0.1 mg/l	0.1	ND	ND	-
Lead	0.1 mg/l	0.1	ND	ND	ND
Chromium (VI)	0.5 mg/l	0.1	ND	ND	ND
Trichloroethylene	0.3 mg/l	0.3	ND	ND	-
Tetrachloroethylene	0.1 mg/l	0.1	ND	ND	-

Dichloromethane	0.2 mg/l	0.2	ND	ND	-
1,1,1-trichloroethane	3 mg/l	3	ND	ND	-


* Regulated values are in accordance with the Water Pollution Control Law and local regulations.

* ND ("not detected") indicates a value below the lower limit of detection.

* ND is considered to be the lower limit of detection when calculating the average.

* Other items are confirmed to be below the regulated value.

Data

Third party verification 



Site Data (Japan)

Shonan Plant

Overview

Year of Establishment	1966
Location	Hiratsuka, Kanagawa Prefecture
Main Products	Control equipment for construction and mining equipment, hybrid components. Thermoelectric modules, temperature control equipment, etc.
Site/Green Landscape (1,000 m ²)	69/15
Number of employees	1,067
Date of ISO14001 certification acquisition	March 2000

* The number of employees includes those working for Komatsu affiliates on the premises.

* The number of employees as of the end of March 2013.

Major Performance

Environmental impact		Energy consumption		
Item	Actual value	Item	Actual consumption	Converted to calorie equivalents (GJ)

Total CO ₂ emissions	2,839 t-CO ₂	Electricity	7,295 MWh	72,735
NOx total amount	- kg	Heavy oil A	0 kl	0
SOx total amount	0 kg	Kerosene	0 kl	0
Total emissions of waste	147 t	Light oil	0 kl	0
Amount recycled	147 t	Town gas	19 Nkm ³	781
Recycling rate	100 %	LPG	0 t	0
BOD emissions	5,473 kg	Other		0
COD emissions	- kg	Total		73,516
Wastewater	35,626 m ³			

* Refer to the Data on Environmental Impact Resulting from Business Activities for details on the methods used to calculate amounts.

* Total emissions of waste are expressed as a composite of the amount recycled (excluding valuables) and the amount disposed.

* Recycling rate is calculated by dividing the amount recycled (including valuables) by the amount generated (including valuables).

* Total emissions of BOD and COD are calculated by multiplying the average concentration by the amount of wastewater.

* The heat energy conversion factor is calculated in keeping with Greenhouse Gas Emission Calculation - Reporting Manual, which is based on the act on Promotion of Global Warming Countermeasures.

Compliance Conditions to Major Regulations

Air				
Item	Unit	Facility	Regulated value	Actual value
Nitrogen oxides (NOx)		N/A	-	-
Sulfur oxides (SOx)	-			

Soot and dust		N/A	-	-

* Regulated values are in accordance with the Air Pollution Control Law and local regulations.

Wastewater					
Item	Regulated value according to the Water Pollution Control Law	Regulated value	Actual value		
			Maximum	Minimum	Average
pH	5.8-8.6	5-9	8.2	6.1	7.2
BOD (Biochemical oxygen demand)	160 mg/l	600	230	1	94.0
COD (Chemical Oxygen Demand)	160 mg/l	-	-	-	-
Suspended solids (SS)	200 mg/l	600	230	ND	43.0
Mineral oils	5 mg/l	5	ND	ND	ND
Copper	3 mg/l	3	ND	ND	ND
Zinc	2 mg/l	2	0.03	ND	0.025
Nitrogen	120 mg/l	-	-	-	-
Phosphorus	16 mg/l	-	-	-	-
Cadmium	0.1 mg/l	0.1	ND	ND	ND
Lead	0.1 mg/l	0.1	ND	ND	ND
Chromium (VI)	0.5 mg/l	0.5	ND	ND	ND
Trichloroethylene	0.3 mg/l	0.3	ND	ND	ND
Tetrachloroethylene	0.1 mg/l	0.1	ND	ND	ND

Dichloromethane	0.2 mg/l	0.2	ND	ND	ND
1,1,1-trichloroethane	3 mg/l	3	ND	ND	ND

* Regulated values are in accordance with the Water Pollution Control Law and local regulations.


* ND ("not detected") indicates a value below the lower limit of detection.

* ND is considered to be the lower limit of detection when calculating the average.

* Other items are confirmed to be below the regulated value.

* Data for the Shonan Plant include data for KELK Ltd.

Data

Third party verification 

Site Data (Japan)

Tochigi Plant

Overview

Year of Establishment	1968
Location	Oyama, Tochigi Prefecture
Main Products	Forklift trucks, mini excavators, mini wheel loaders
Site/Green Landscape (1,000 m ²)	235/28
Number of employees	1,052
Date of ISO14001 certification acquisition	February 1998

* The number of employees includes those working for Komatsu affiliates on the premises.

* The number of employees as of the end of March 2013.

Major Performance

Environmental impact		Energy consumption		
Item	Actual value	Item	Actual consumption	Converted to calorie equivalents (GJ)
Total CO ₂ emissions	4,270 t-CO ₂	Electricity	6,169 MWh	60,017

NOx total amount	1,763 kg	Heavy oil A	578 kl	22,611
SOx total amount	1,261 kg	Kerosene	0 kl	0
Total emissions of waste	484 t	Light oil	22 kl	830
Amount recycled	484 t	Town gas	0 Nkm ³	0
Recycling rate	100 %	LPG	84 t	4,194
BOD emissions	461 kg	Other		400
COD emissions	480 kg	Total		88,052
Wastewater	83,636 m ³			

* Refer to the Data on Environmental Impact Resulting from Business Activities for details on the methods used to calculate amounts.

* Total emissions of waste are expressed as a composite of the amount recycled (excluding valuables) and the amount disposed.

* Recycling rate is calculated by dividing the amount recycled (including valuables) by the amount generated (including valuables).

* Total emissions of BOD and COD are calculated by multiplying the average concentration by the amount of wastewater.

* The heat energy conversion factor is calculated in keeping with Greenhouse Gas Emission Calculation - Reporting Manual, which is based on the act on Promotion of Global Warming Countermeasures.

Compliance Conditions to Major Regulations

Air				
Item	Unit	Facility	Regulated value	Actual value
Nitrogen oxides (NOx)	ppm	Small boilers	(260)	82
Sulfur oxides (SOx)	-	K-value regulation	7.0	0.27
Soot and dust	g/m ³ N	Small boilers	(0.5)	0.004

* Regulated values are in accordance with the Air Pollution Control Law and local regulations.

Wastewater					
Item	Regulated value according to the Water Pollution Control Law	Regulated value	Actual value		
			Maximum	Minimum	Average
pH	5.8-8.6	5.8-8.6	7.3	7.0	7.2
BOD (Biochemical oxygen demand)	160 mg/l	25	13.0	1.9	5.5
COD (Chemical Oxygen Demand)	160 mg/l	25	8.5	2.8	5.7
Suspended solids (SS)	200 mg/l	50	7.6	3.6	5.8
Mineral oils	5 mg/l	5	ND	ND	ND
Copper	3 mg/l	3	ND	ND	ND
Zinc	2 mg/l	2	0.25	ND	0.08
Nitrogen	120 mg/l	20	5.9	4.1	5.0
Phosphorus	16 mg/l	2	0.8	0.6	0.7
Cadmium	0.1 mg/l	0.1	ND	ND	ND
Lead	0.1 mg/l	0.1	ND	ND	ND
Chromium (VI)	0.5 mg/l	0.1	ND	ND	ND
Trichloroethylene	0.3 mg/l	0.3	ND	ND	ND
Tetrachloroethylene	0.1 mg/l	0.1	ND	ND	ND
Dichloromethane	0.2 mg/l	0.2	ND	ND	ND

1,1,1-trichloroethane	3 mg/l	3	ND	ND	ND
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* Regulated values are in accordance with the Water Pollution Control Law and local regulations.

* ND ("not detected") indicates a value below the lower limit of detection.

* ND is considered to be the lower limit of detection when calculating the average.

* Other items are confirmed to be below the regulated value.

Data

Third party verification 



Site Data (Japan)
Research Division

Overview

Year of Establishment	1985
Location	Hiratsuka, Kanagawa Prefecture
Main Products	R&D on business fields of the Komatsu Group
Site/Green Landscape (1,000 m ²)	195/124
Number of employees	161
Date of ISO14001 certification acquisition	May 2008

* The number of employees includes those working for Komatsu affiliates on the premises.
* The number of employees as of the end of March 2013.

Major Performance

Environmental impact		Energy consumption		
Item	Actual value	Item	Actual consumption	Converted to calorie equivalents (GJ)
Total CO ₂ emissions	1,396 t-CO ₂	Electricity	2,771 MWh	26,847

NOx total amount	421 kg	Heavy oil A	2 kl	90
SOx total amount	4 kg	Kerosene	117 kl	4,310
Total emissions of waste	159 t	Light oil	3 kl	98
Amount recycled	159 t	Town gas	0 Nkm ³	0
Recycling rate	99.7 %	LPG	9 t	440
BOD emissions	9 kg	Other		13
COD emissions	20 kg	Total		31,798
Wastewater	4,490 m ³			

* Refer to the Data on Environmental Impact Resulting from Business Activities for details on the methods used to calculate amounts.

* Total emissions of waste are expressed as a composite of the amount recycled (excluding valuables) and the amount disposed.

* Recycling rate is calculated by dividing the amount recycled (including valuables) by the amount generated (including valuables).

* Total emissions of BOD and COD are calculated by multiplying the average concentration by the amount of wastewater.

* The heat energy conversion factor is calculated in keeping with Greenhouse Gas Emission Calculation - Reporting Manual, which is based on the act on Promotion of Global Warming Countermeasures.

Compliance Conditions to Major Regulations

Air				
Item	Unit	Facility	Regulated value	Actual value
Nitrogen oxides (NOx)	ppm	Service generator	303	90
	ppm	Cold/hot water generator	390	37
	ppm			
	ppm			
Sulfur oxides (SOx)	-	K-value regulation	11.5	0.9
Soot and dust	g/m ³ N	Service generator	0.1	0.017

	g/m ³ N	Cold/hot water generator	0.2	0.006
	g/m ³ N			
	g/m ³ N			

* Regulated values are in accordance with the Air Pollution Control Law and local regulations.

Wastewater					
Item	Regulated value according to the Water Pollution Control Law	Regulated value	Actual value		
			Maximum	Minimum	Average
pH	5.8-8.6	5.8-8.6	7.4	7.0	7.3
BOD (Biochemical oxygen demand)	160 mg/l	10	2.0	1.0	1.5
COD (Chemical Oxygen Demand)	160 mg/l	25	8.0	2.0	4.7
Suspended solids (SS)	200 mg/l	65	5.0	1.0	2.2
Mineral oils	5 mg/l	5	ND	ND	ND
Copper	3 mg/l	1	ND	ND	ND
Zinc	2 mg/l	1	ND	ND	ND
Nitrogen	120 mg/l	-	-	-	-
Phosphorus	16 mg/l	-	-	-	-
Cadmium	0.1 mg/l	0.1	ND	ND	ND
Lead	0.1 mg/l	0.1	ND	ND	ND
Chromium (VI)	0.5 mg/l	0.5	ND	ND	ND
Trichloroethylene	0.3 mg/l	0.3	ND	ND	ND

Tetrachloroethylene	0.1 mg/l	0.1	ND	ND	ND
Dichloromethane	0.2 mg/l	0.2	ND	ND	ND
1,1,1-trichloroethane	3 mg/l	3	ND	ND	ND


* Regulated values are in accordance with the Water Pollution Control Law and local regulations.

* ND ("not detected") indicates a value below the lower limit of detection.

* ND is considered to be the lower limit of detection when calculating the average.

* Other items are confirmed to be below the regulated value.

Data

Third party verification 



Site Data (Japan)

Komatsu Castex Ltd.

Overview

Year of Establishment	1952
Location	Himi, Toyama Prefecture
Main Products	Iron castings, steel castings, molds for casting, etc.
Site/Green Landscape (1,000 m ²)	433/104
Number of employees	1,032
Date of ISO14001 certification acquisition	January 2000

* The number of employees includes those working for Komatsu affiliates on the premises.

* The number of employees as of the end of March 2013.

Major Performance

Environmental impact		Energy consumption		
Item	Actual value	Item	Actual consumption	Converted to calorie equivalents (GJ)
Total CO ₂ emissions	60,136 t-CO ₂	Electricity	113,750 MWh	1,108,126

NOx total amount	4,078 kg	Heavy oil A	1,840 kl	71,939
SOx total amount	1,555 kg	Kerosene	1,118 kl	41,030
Total emissions of waste	6,511 t	Light oil	261 kl	9,979
Amount recycled	6,496 t	Town gas	0 Nkm ³	0
Recycling rate	100 %	LPG	2,665 t	133,768
BOD emissions	3,613 kg	Other		134
COD emissions	4,773 kg	Total		1,364,976
Wastewater	1,107,737 m ³			

* Refer to the Data on Environmental Impact Resulting from Business Activities for details on the methods used to calculate amounts.

* Total emissions of waste are expressed as a composite of the amount recycled (excluding valuables) and the amount disposed.

* Recycling rate is calculated by dividing the amount recycled (including valuables) by the amount generated (including valuables).

* Total emissions of BOD and COD are calculated by multiplying the average concentration by the amount of wastewater.

* The heat energy conversion factor is calculated in keeping with Greenhouse Gas Emission Calculation - Reporting Manual, which is based on the act on Promotion of Global Warming Countermeasures.

Compliance Conditions to Major Regulations

Air				
Item	Unit	Facility	Regulated value	Actual value
Nitrogen oxides (NOx)	ppm	Annealing furnace	200	85
	ppm	Annealing furnace (small)	180	25
	ppm	Calciners	220	Less than 7
	ppm			
Sulfur oxides (SOx)	-	K-value regulation	17.5	3.46

Soot and dust	g/m ³ N	Annealing furnace	0.25	0.01 or less
	g/m ³ N	Annealing furnace (small)	0.2	0.01 or less
	g/m ³ N	Calciners	0.15	0.02
	g/m ³ N	Arch furnace	0.1	0.01 or less

* Regulated values are in accordance with the Air Pollution Control Law and local regulations.

Wastewater					
Item	Regulated value according to the Water Pollution Control Law	Regulated value	Actual value		
			Maximum	Minimum	Average
pH	5.8-8.6	5.8-8.6	8.6	7.0	7.7
BOD (Biochemical oxygen demand)	160 mg/l	25	6.7	0.5	2.8
COD (Chemical Oxygen Demand)	160 mg/l	160	5.4	1.5	3.7
Suspended solids (SS)	200 mg/l	90	23.0	ND	5.9
Mineral oils	5 mg/l	5	ND	ND	ND
Copper	3 mg/l	1	ND	ND	ND
Zinc	2 mg/l	2	0.3	ND	0.23
Nitrogen	120 mg/l	120	7.8	2.5	4.1
Phosphorus	16 mg/l	16	1.5	0.06	0.45
Cadmium	0.1 mg/l	0.1	ND	ND	ND
Lead	0.1 mg/l	0.1	ND	ND	ND

Chromium (VI)	0.5 mg/l	0.5	ND	ND	ND
Trichloroethylene	0.3 mg/l	0.3	ND	ND	ND
Tetrachloroethylene	0.1 mg/l	0.1	ND	ND	ND
Dichloromethane	0.2 mg/l	0.2	ND	ND	ND
1,1,1-trichloroethane	3 mg/l	3	ND	ND	ND

* Regulated values are in accordance with the Water Pollution Control Law and local regulations.

* ND ("not detected") indicates a value below the lower limit of detection.

* ND is considered to be the lower limit of detection when calculating the average.

* Other items are confirmed to be below the regulated value.

Data

Third party verification 



Site Data (Japan)
Komatsu NTC Ltd.

Overview

Year of Establishment	1945
Location	Nanto, Toyama Prefecture
Main Products	Machine tools, laser process machines, wire saws
Site/Green Landscape (1,000 m ²)	188/28
Number of employees	1,101
Date of ISO14001 certification acquisition	June 1999

* The number of employees includes those working for Komatsu affiliates on the premises.
* The number of employees as of the end of March 2013.

Major Performance

Environmental impact		Energy consumption		
Item	Actual value	Item	Actual consumption	Converted to calorie equivalents (GJ)
Total CO ₂ emissions	8,103 t-CO ₂	Electricity	20,597 MWh	201,740

NOx total amount	- kg	Heavy oil A	0 kl	0
SOx total amount	0 kg	Kerosene	0 kl	18
Total emissions of waste	1,621 t	Light oil	21 kl	806
Amount recycled	1,488 t	Town gas	0 Nkm ³	0
Recycling rate	92.1 %	LPG	46 t	2,303
BOD emissions	824 kg	Other		0
COD emissions	- kg	Total		204,867
Wastewater	998,560 m ³			

* Refer to the Data on Environmental Impact Resulting from Business Activities for details on the methods used to calculate amounts.

* Total emissions of waste are expressed as a composite of the amount recycled (excluding valuables) and the amount disposed.

* Recycling rate is calculated by dividing the amount recycled (including valuables) by the amount generated (including valuables).

* Total emissions of BOD and COD are calculated by multiplying the average concentration by the amount of wastewater.

* The heat energy conversion factor is calculated in keeping with Greenhouse Gas Emission Calculation - Reporting Manual, which is based on the act on Promotion of Global Warming Countermeasures.

Compliance Conditions to Major Regulations

Air				
Item	Unit	Facility	Regulated value	Actual value
Nitrogen oxides (NOx)	ppm	N/A	-	-
	ppm			
	ppm			
	ppm			
Sulfur oxides (SOx)	-			
Soot and dust	g/m ³ N	N/A	-	-

	g/m ³ N			
	g/m ³ N			


* Regulated values are in accordance with the Air Pollution Control Law and local regulations.

Wastewater					
Item	Regulated value according to the Water Pollution Control Law	Regulated value	Actual value		
			Maximum	Minimum	Average
pH	5.8-8.6	5.8-8.6	7.5	6.3	6.8
BOD (Biochemical oxygen demand)	160 mg/l	160	1.3	ND	0.8
COD (Chemical Oxygen Demand)	160 mg/l	-	-	-	-
Suspended solids (SS)	200 mg/l	200	8.0	ND	2.0
Mineral oils	5 mg/l	5	ND	ND	ND
Copper	3 mg/l	-	-	-	-
Zinc	2 mg/l	-	-	-	-
Nitrogen	120 mg/l	-	-	-	-
Phosphorus	16 mg/l	-	-	-	-
Cadmium	0.1 mg/l	-	-	-	-
Lead	0.1 mg/l	-	-	-	-
Chromium (VI)	0.5 mg/l	-	-	-	-
Trichloroethylene	0.3 mg/l	-	-	-	-
Tetrachloroethylene	0.1 mg/l	-	-	-	-
Dichloromethane	0.2 mg/l	-	-	-	-

1,1,1-trichloroethane	3 mg/l	-	-	-	-
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- * Regulated values are in accordance with the Water Pollution Control Law and local regulations.
- * ND ("not detected") indicates a value below the lower limit of detection.
- * ND is considered to be the lower limit of detection when calculating the average.
- * Other items are confirmed to be below the regulated value.
- * Data for Komatsu NTC Ltd. include data for the Toyama plant and the Fukuno Plant.

Data

Third party verification 



Site Data (Japan)

Komatsu Cabtec Co., Ltd.

Overview

Year of Establishment	1918
Location	Ryuou-cho, Gamou, Shiga Prefecture
Main Products	Cabs for construction equipment
Site/Green Landscape (1,000 m ²)	42/9
Number of employees	357
Date of ISO14001 certification acquisition	December 2007

* The number of employees includes those working for Komatsu affiliates on the premises.

* The number of employees as of the end of March 2013.

Major Performance

Environmental impact		Energy consumption		
Item	Actual value	Item	Actual consumption	Converted to calorie equivalents (GJ)
Total CO ₂ emissions	3,254 t-CO ₂	Electricity	6,356 MWh	62,116

NOx total amount	- kg	Heavy oil A	0 kl	0
SOx total amount	4 kg	Kerosene	11 kl	418
Total emissions of waste	342 t	Light oil	36 kl	1,387
Amount recycled	274 t	Town gas	0 Nkm ³	0
Recycling rate	98.6 %	LPG	230 t	11,536
BOD emissions	205 kg	Other		0
COD emissions	344 kg	Total		75,457
Wastewater	98,250 m ³			

* Refer to the Data on Environmental Impact Resulting from Business Activities for details on the methods used to calculate amounts.

* Total emissions of waste are expressed as a composite of the amount recycled (excluding valuables) and the amount disposed.

* Recycling rate is calculated by dividing the amount recycled (including valuables) by the amount generated (including valuables).

* Total emissions of BOD and COD are calculated by multiplying the average concentration by the amount of wastewater.

* The heat energy conversion factor is calculated in keeping with Greenhouse Gas Emission Calculation - Reporting Manual, which is based on the act on Promotion of Global Warming Countermeasures.

Compliance Conditions to Major Regulations

Air				
Item	Unit	Facility	Regulated value	Actual value
Nitrogen oxides (NOx)	ppm	N/A	-	-
	ppm			
	ppm			
	ppm			
Sulfur oxides (SOx)	-			
Soot and dust	g/m ³ N	N/A	-	-

	g/m ³ N			
	g/m ³ N			


* Regulated values are in accordance with the Air Pollution Control Law and local regulations.

Wastewater					
Item	Regulated value according to the Water Pollution Control Law	Regulated value	Actual value		
			Maximum	Minimum	Average
pH	5.8-8.6	5.8-8.6	7.5	7.0	7.2
BOD (Biochemical oxygen demand)	160 mg/l	20	5.0	ND	2.1
COD (Chemical Oxygen Demand)	160 mg/l	20	8.6	0.8	3.5
Suspended solids (SS)	200 mg/l	20	6.0	0.6	2.6
Mineral oils	5 mg/l	-	-	-	-
Copper	3 mg/l	0.1	0.02	ND	0.01
Zinc	2 mg/l	0.5	0.11	ND	0.05
Nitrogen	120 mg/l	8	3.0	ND	1.5
Phosphorus	16 mg/l	0.6	ND	ND	ND
Cadmium	0.1 mg/l	-	-	-	-
Lead	0.1 mg/l	0.03	ND	ND	ND
Chromium (VI)	0.5 mg/l	-	-	-	-
Trichloroethylene	0.3 mg/l	-	-	-	-
Tetrachloroethylene	0.1 mg/l	-	-	-	-
Dichloromethane	0.2 mg/l	-	-	-	-

1,1,1-trichloroethane	3 mg/l	-	-	-	-
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- * Regulated values are in accordance with the Water Pollution Control Law and local regulations.
- * ND ("not detected") indicates a value below the lower limit of detection.
- * ND is considered to be the lower limit of detection when calculating the average.
- * Other items are confirmed to be below the regulated value.

Data

Third party verification 

Site Data (Japan)

Komatsu House, Ltd.

Overview

Year of Establishment	1971
Location	Shinshiro, Aichi Prefecture
Main Products	Prefabricated structures for businesses
Site/Green Landscape (1,000 m ²)	31/1
Number of employees	48
Date of ISO14001 certification acquisition	March 2002

* The number of employees includes those working for Komatsu affiliates on the premises.

* The number of employees as of the end of March 2013.

Major Performance

Environmental impact		Energy consumption		
Item	Actual value	Item	Actual consumption	Converted to calorie equivalents (GJ)
Total CO ₂ emissions	1,222 t-CO ₂	Electricity	949 MWh	9,460
NOx total amount	297 kg	Heavy oil A	102 kl	3,988
SOx total amount	178 kg	Kerosene	0 kl	0
Total emissions of waste	79 t	Light oil	13 kl	481

Amount recycled	79 t	Town gas	0 Nkm ³	0
Recycling rate	100 %	LPG	183 t	9,180
BOD emissions	138 kg	Other		0
COD emissions	245 kg	Total		23,109
Wastewater	9,316 m ³			

* Refer to the Data on Environmental Impact Resulting from Business Activities for details on the methods used to calculate amounts.

* Total emissions of waste are expressed as a composite of the amount recycled (excluding valuables) and the amount disposed.

* Recycling rate is calculated by dividing the amount recycled (including valuables) by the amount generated (including valuables).

* Total emissions of BOD and COD are calculated by multiplying the average concentration by the amount of wastewater.

* The heat energy conversion factor is calculated in keeping with Greenhouse Gas Emission Calculation - Reporting Manual, which is based on the act on Promotion of Global Warming Countermeasures.

Compliance Conditions to Major Regulations

Air				
Item	Unit	Facility	Regulated value	Actual value
Nitrogen oxides (NOx)	ppm	Boiler	250	55
	ppm			
	ppm			
	ppm			
Sulfur oxides (SOx)	-	K-value regulation	17.5	0.59
Soot and dust	g/m ³ N	Boiler	0.3	0.002
	g/m ³ N			
	g/m ³ N			
	g/m ³ N			

* Regulated values are in accordance with the Air Pollution Control Law and local regulations.

Wastewater				
	Regulated value		Actual value	

Item	according to the Water Pollution Control Law	Regulated value	Maximum	Minimum	Average
pH	5.8-8.6	5.8-8.6	7.2	6.3	6.7
BOD (Biochemical oxygen demand)	160 mg/l	160	37.0	3.7	14.8
COD (Chemical Oxygen Demand)	160 mg/l	160	86.0	11.0	26.3
Suspended solids (SS)	200 mg/l	200	26.0	1.0	4.9
Mineral oils	5 mg/l	5	1.0	ND	1.0
Copper	3 mg/l	-	-	-	-
Zinc	2 mg/l	-	-	-	-
Nitrogen	120 mg/l	120	*130	9.7	27.5
Phosphorus	16 mg/l	16	14.0	0.7	2.7
Cadmium	0.1 mg/l	-	-	-	-
Lead	0.1 mg/l	-	-	-	-
Chromium (VI)	0.5 mg/l	-	-	-	-
Trichloroethylene	0.3 mg/l	-	-	-	-
Tetrachloroethylene	0.1 mg/l	-	-	-	-
Dichloromethane	0.2 mg/l	-	-	-	-
1,1,1-trichloroethane	3 mg/l	-	-	-	-

* Regulated values are in accordance with the Water Pollution Control Law and local regulations.


* ND ("not detected") indicates a value below the lower limit of detection.

* ND is considered to be the lower limit of detection when calculating the average.

* Other items are confirmed to be below the regulated value.

* Although the restriction value was exceeded temporarily, it is confirmed about having returned to the stationary state (10-20) by check and cleaning of the processing tub.

Data

Third party verification 



Site Data (Japan)

Komatsu Construction Equipment Sales and Service Japan Ltd.

Overview

Year of Establishment	March 1967
Location	Sagamihara, Kanagawa Prefecture (Head office)
Main Products	Sales and service for construction machinery
Number of business sites	107
Number of employees	1,883
Date of ISO14001 certification acquisition	-

* The number of business sites and employees as of the end of March 2013.

Major Performance

Environmental impact		Energy consumption		
Item	Actual value	Item	Actual consumption	Converted to calorie equivalents (GJ)
Total CO ₂ emissions	4,516 t-CO ₂	Electricity	8,170 MWh	81,455


Total emissions of waste	3,613 t	Heavy oil A	62 kl	2,409
Amount recycled	2,958 t	Kerosene	392 kl	14,379
Recycling rate	81.9 %	Light oil	42 kl	1,601
		LPG	22 t	1,094
		Town gas		1,119
		Total		102,057

* Total emissions of waste are expressed as a composite of the amount recycled (excluding valuables) and the amount disposed.

* Recycling rate is calculated by dividing the amount recycled (including valuables) by the amount generated (including valuables).

* The heat energy conversion factor is calculated in keeping with Greenhouse Gas Emission Calculation - Reporting Manual, which is based on the act on Promotion of Global Warming Countermeasures.

Data

Third party verification 



Site Data (Japan)

Komatsu Rental Ltd.

Overview

Year of Establishment	October 2010
Location	Yokohama, Kanagawa Prefecture (Head office)
Main Products	Rentals for construction machinery, engineering works construction machine apparatuses, and vehicles
Number of business sites	143
Number of employees	944
Date of ISO14001 certification acquisition	-

* The number of business sites and employees as of the end of March 2013.

Major Performance

Environmental impact		Energy consumption		
Item	Actual value	Item	Actual consumption	Converted to calorie equivalents (GJ)
Total CO ₂ emissions	2,163 t-CO ₂	Electricity	4,303 MWh	42,899


Total emissions of waste	3,202 t	Heavy oil A	0 kl	0
Amount recycled	2,178 t	Kerosene	92 kl	3,362
Recycling rate	68.0 %	Light oil	92 kl	3,526
		LPG	8 t	397
		Town gas		4
		Total		50,187

* Total emissions of waste are expressed as a composite of the amount recycled (excluding valuables) and the amount disposed.

* Recycling rate is calculated by dividing the amount recycled (including valuables) by the amount generated (including valuables).

* The heat energy conversion factor is calculated in keeping with Greenhouse Gas Emission Calculation - Reporting Manual, which is based on the act on Promotion of Global Warming Countermeasures.

Data

Third party verification 



Site Data (Japan)

Komatsu Forklift Japan Ltd.

Overview

Year of Establishment	January 1973
Location	Shinagawa, Tokyo metropolitan (Head office)
Main Products	Sales and service for forklift
Number of business sites	138
Number of employees	1,751
Date of ISO14001 certification acquisition	-

* The number of business sites and employees as of the end of March 2013.

Major Performance

Environmental impact		Energy consumption		
Item	Actual value	Item	Actual consumption	Converted to calorie equivalents (GJ)
Total CO ₂ emissions	2,831 t-CO ₂	Electricity	5,530 MWh	55,135

Total emissions of waste	4,534 t	Heavy oil A	0 kl	0
Amount recycled	4,102 t	Kerosene	207 kl	7,601
Recycling rate	90.5 %	Light oil	5 kl	172
		LPG	55 t	2,756
		Town gas		260
		Total		65,924

* Total emissions of waste are expressed as a composite of the amount recycled (excluding valuables) and the amount disposed.

Recycling rate is calculated by dividing the amount recycled (including valuables) by the amount generated (including valuables).

* The heat energy conversion factor is calculated in keeping with Greenhouse Gas Emission Calculation - Reporting Manual, which is based on the act on Promotion of Global Warming Countermeasures.